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AUTHORITY

CNO [N772] ltr N772A/6U875630, 20 Jan
2006, ONR ltr, 31 Jan 2006

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AUTHORITY

ONR, per DTIC Form 55

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MC REPORT 011
Volume 11

AD 91250

ACOUSTIC ENVIRONMENTAL SCENARIOS
AND
PREDICTIONS FOR ASW

VOLUME 11
AREA 4A, SUMMER
PREDICTIONS FOR PASSIVE SONAR

October 1972

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LONG RANGE ACOUSTIC PROPAGATION PROJECT



OCEAN SCIENCE PROGRAM
MAURY CENTER FOR OCEAN SCIENCE
Department of the Navy
Washington, D.C.

585734
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Test and Evaluation; 23 AUG 1973. Other requests
for this document must be referred to

Director, Long Range Acoustic Propagation Project (ONR Code 102-08).

Arlington, Va. 22217

201

(6) ACOUSTIC ENVIRONMENTAL SCENARIOS AND PREDICTIONS
FOR ASW

Volume XI. AREA 4A SUMMER
PREDICTIONS FOR PASSIVE SONAR.

11 Oct 72

(12) 243 p.

~~Long Range acoustic propagation project~~

(14) MAC-D11-Vc1-11

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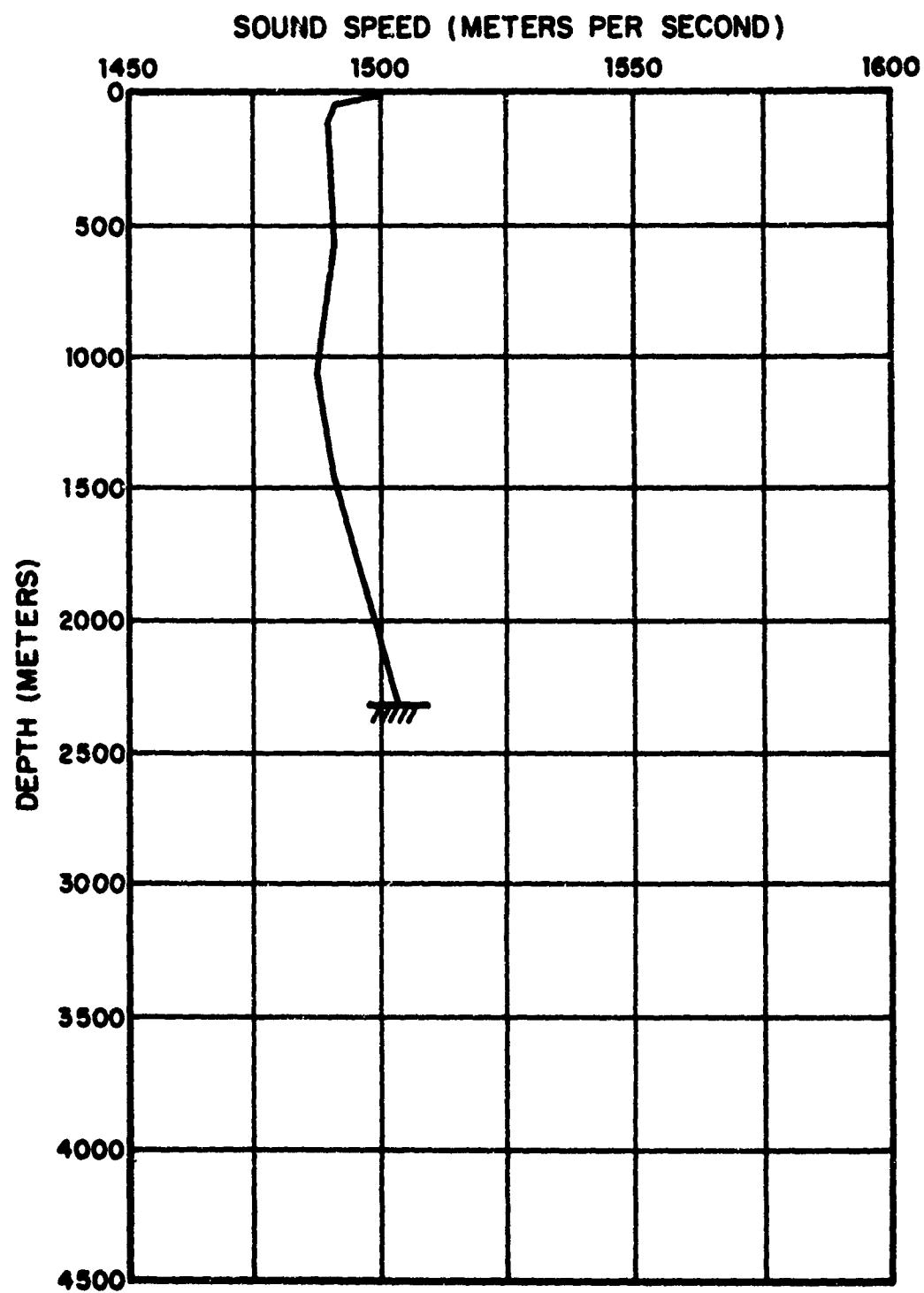
Vol 1 525 735

v

Refer to Volume I of this report for an explanation of the
plot format and descriptions of models and ocean areas.

404 409 ✓

✓



SOUND SPEED PROFILE
AREA 4A, SUMMER

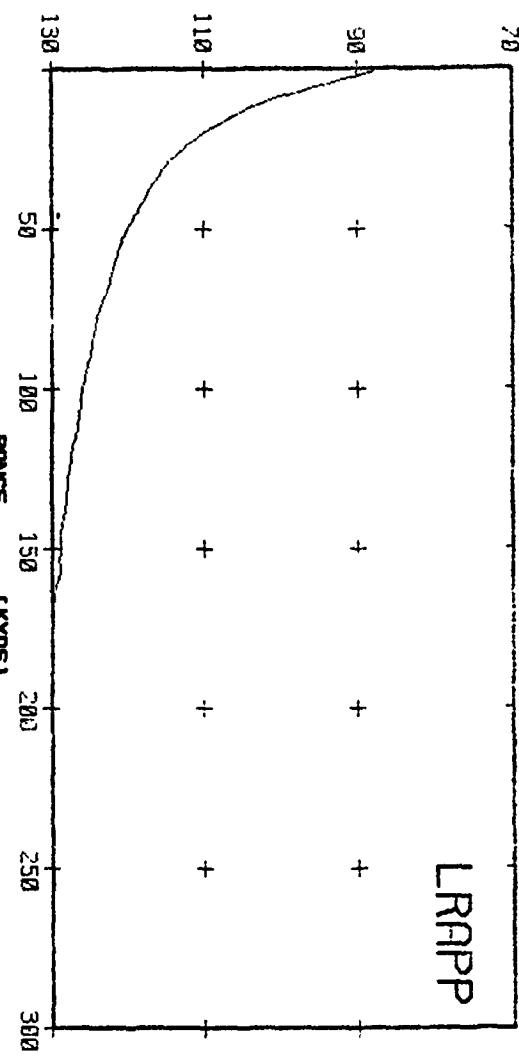
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AREA 4A SUMMER

S 28 R 80 F 10

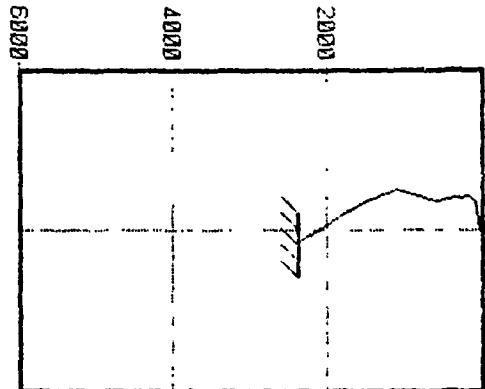
1450 M/S 1500 1550

DB LOSS

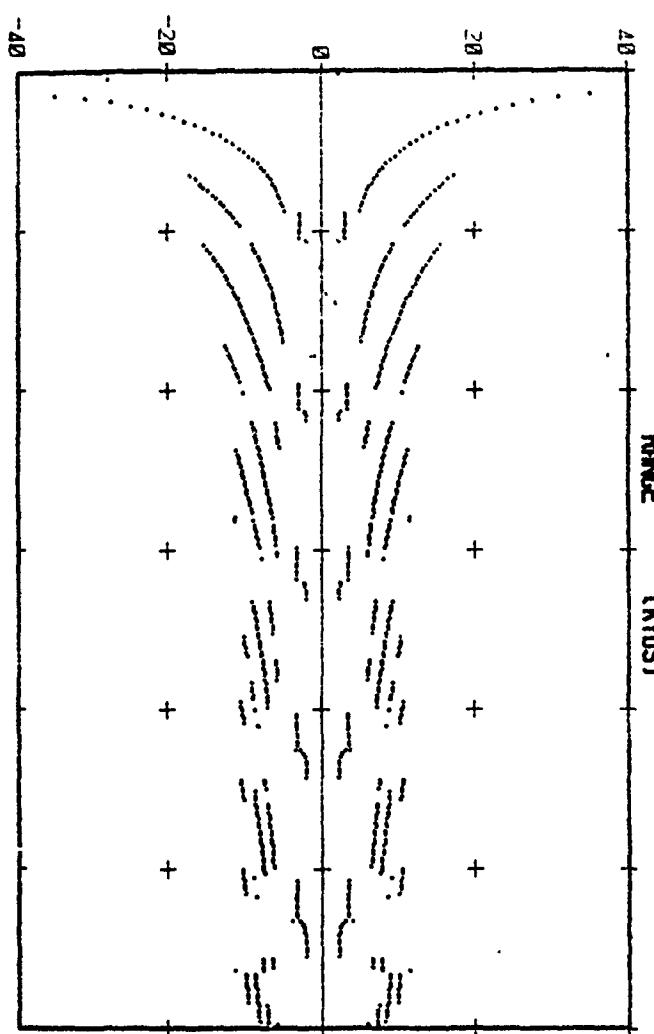


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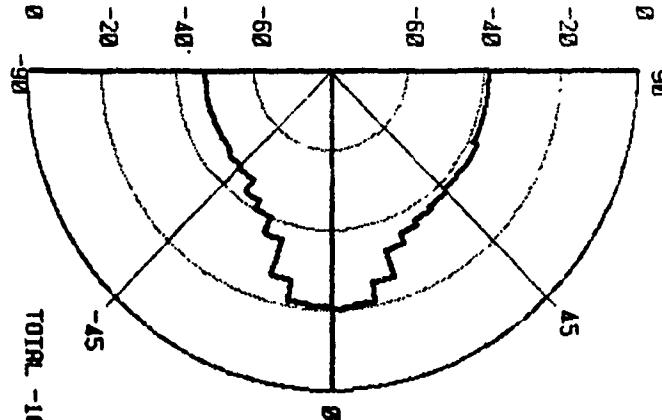
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)



TOTAL -16.1 DB

PIER AIR SUMMER

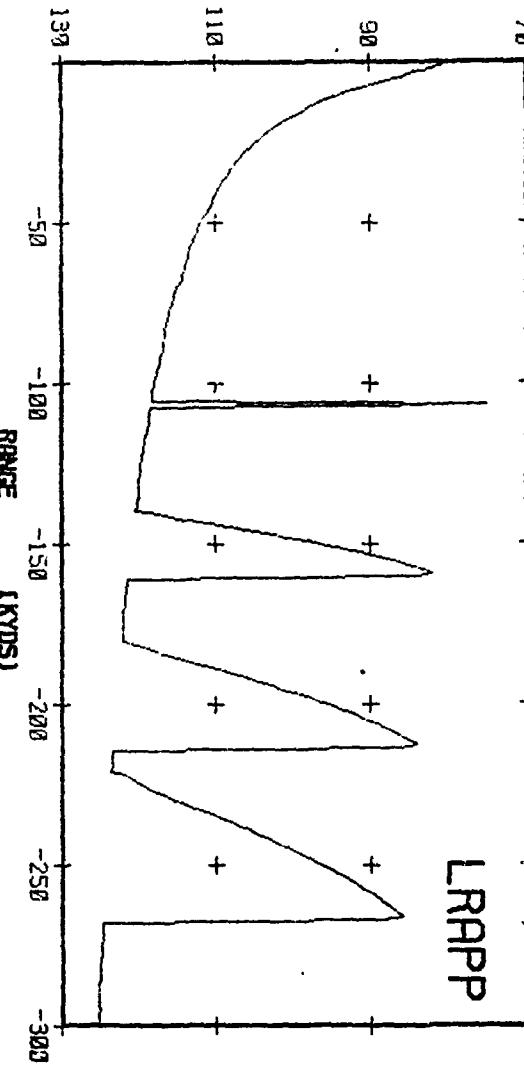
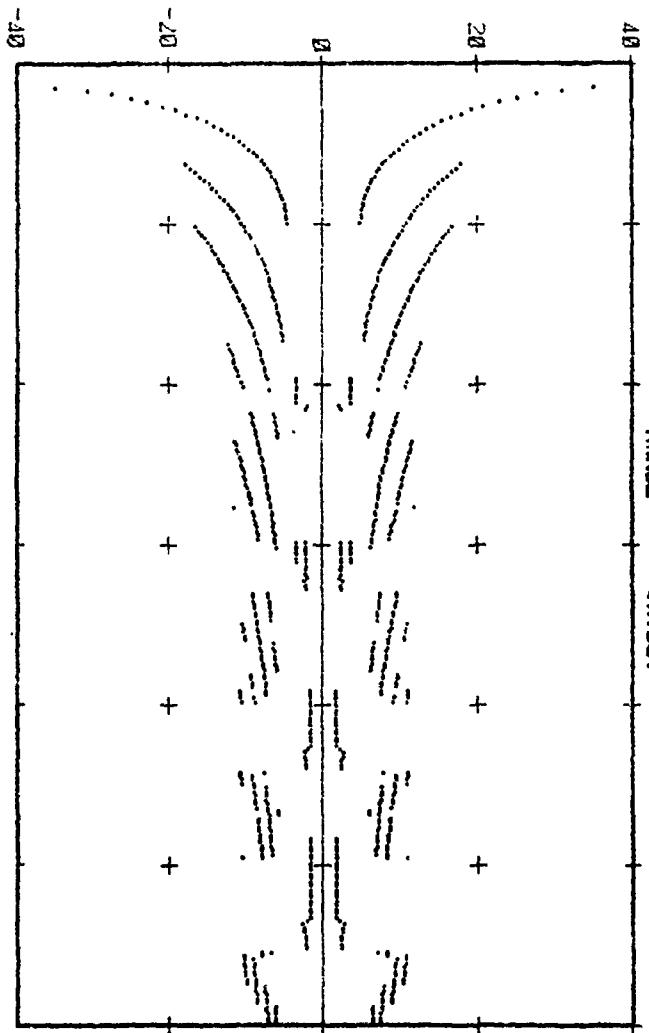
S S P R T 10

1450 M/S 1500 1550

DB LOSS

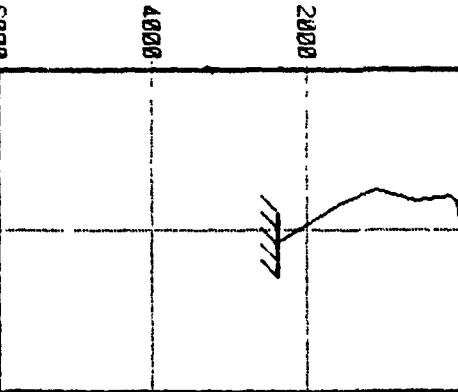
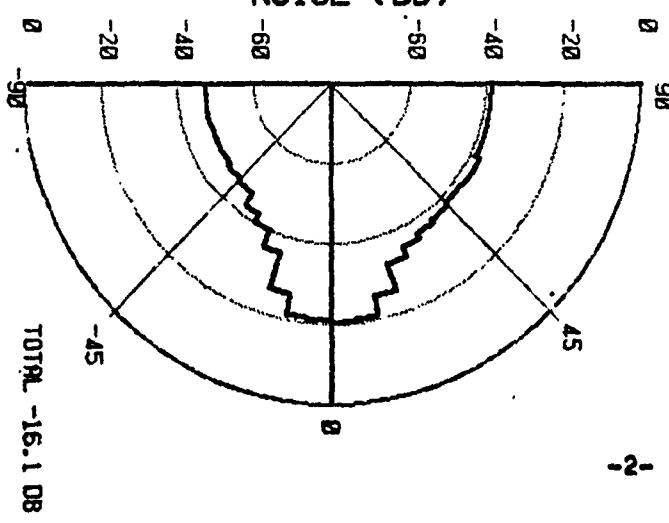
L RAPP

ARRIVAL ANGLE



DEPTH IN METERS

NOISE (DB)



78

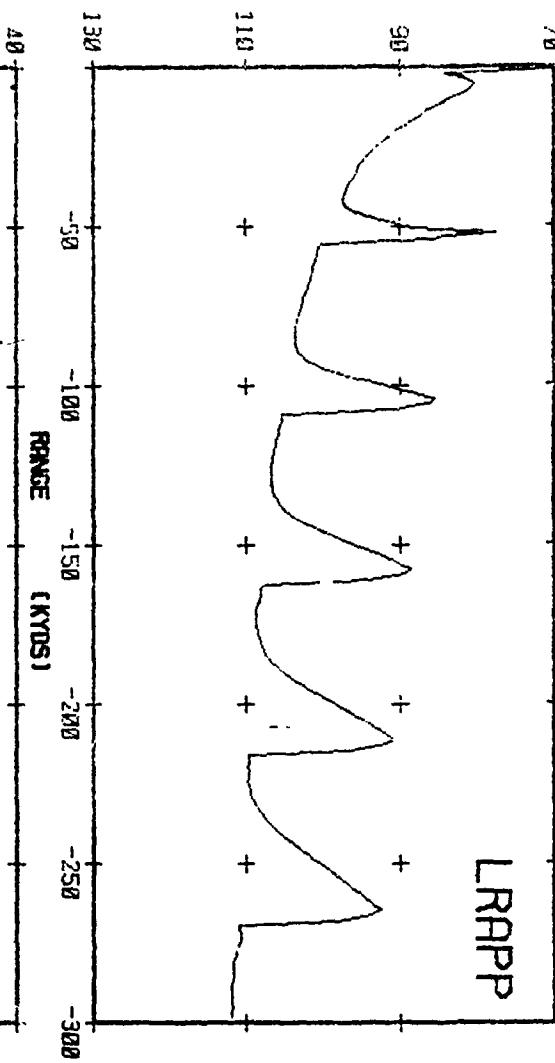
PRED 4H SUMMER

S 233 R 60 F 18

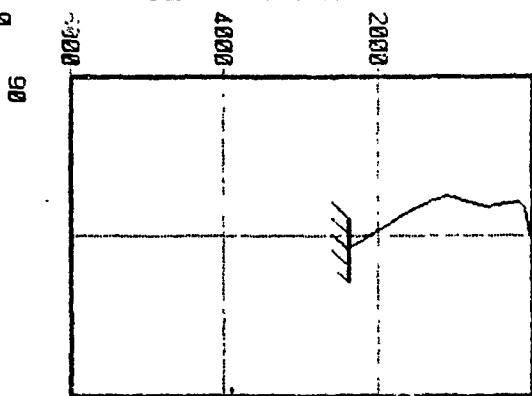
1450 M/S 1500 1550

LRAPP

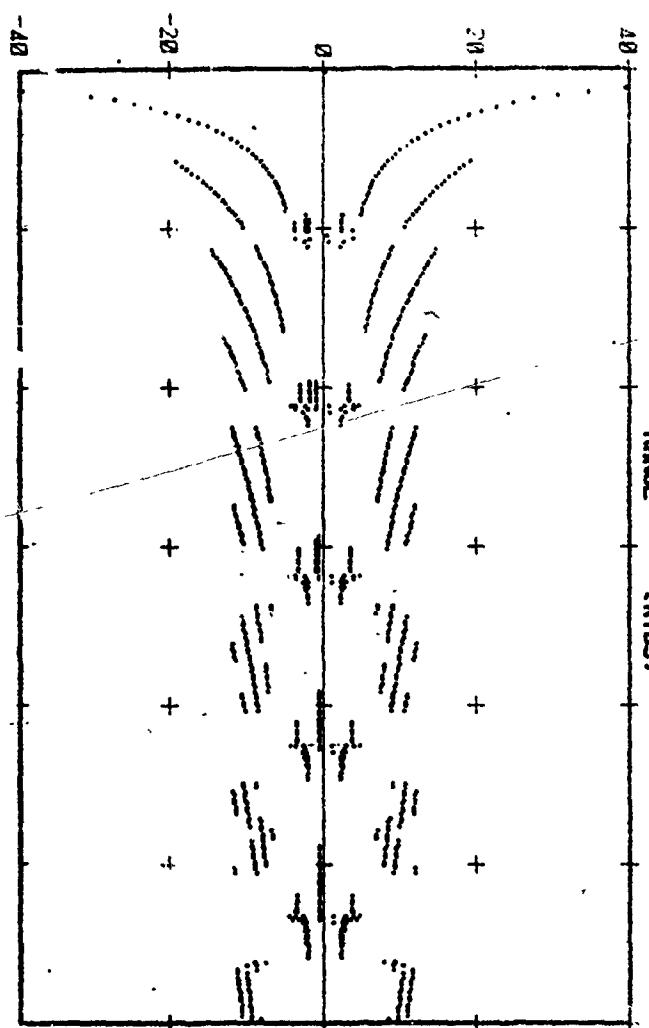
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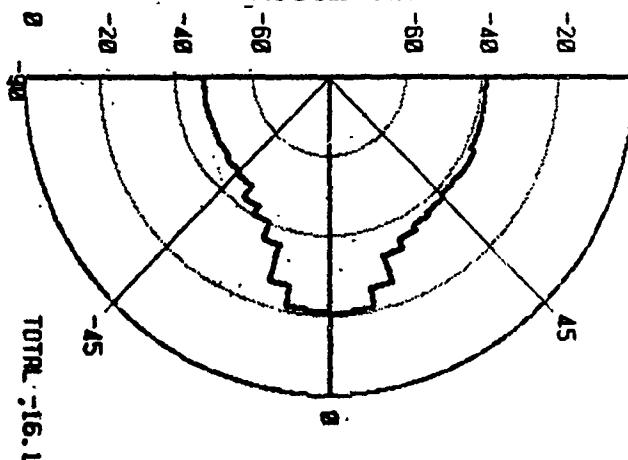
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)



TOTAL -16.1 dB

-3-

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78

RRR AR SUMMER

S 28 R 133 F 10

1450 M/S 1500 1550

LRAPP

DB LOSS

130
110
40
-50
-100
-150
-200
-250
-300

DEPTH IN METERS

6000
2000

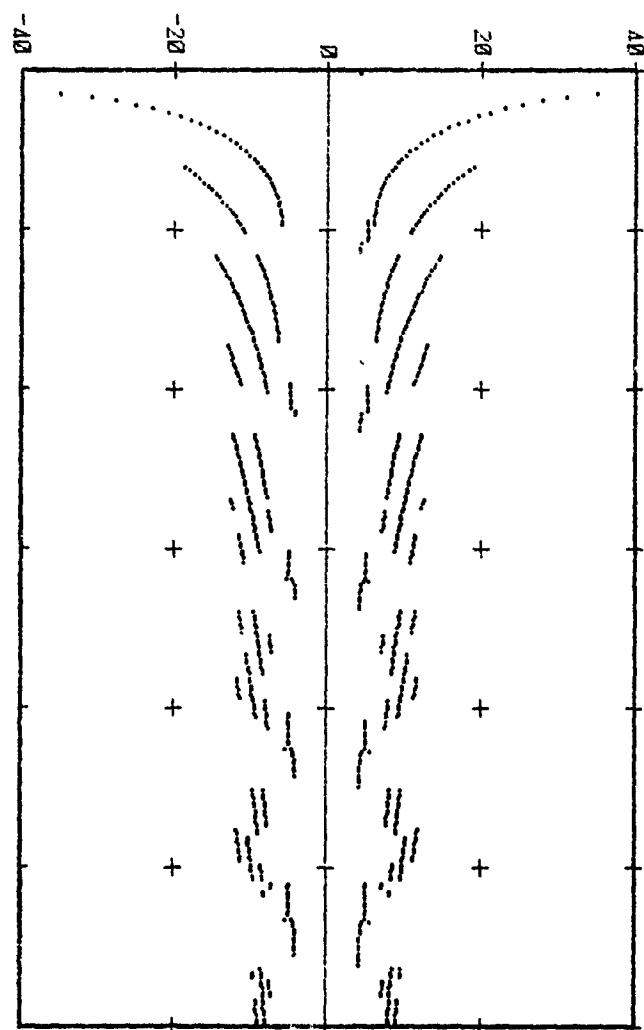
1

ARRIVAL ANGLE

ARRIVAL ANGLE

20
-20
+
+
+
+
+
+
+
+
+
+
+
+
+
+0
-100
-150
-200
-250
-300

RANGE (KMS)



NOISE (DB)

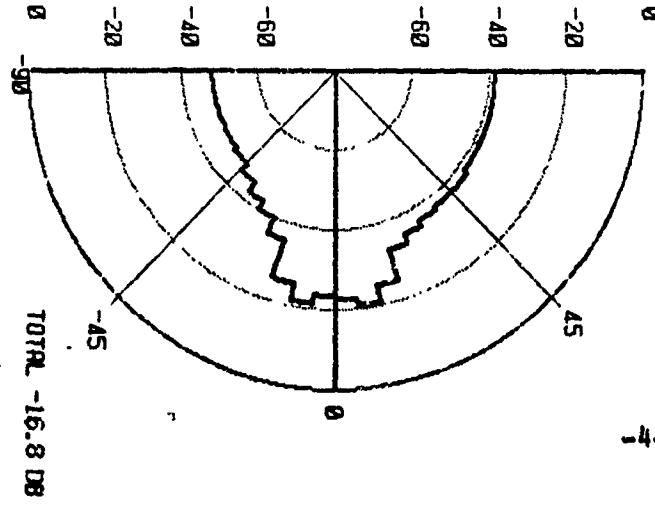
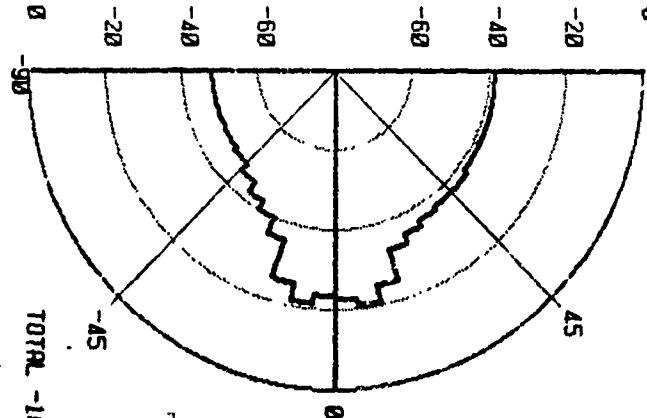
-60
-40
-20

0

90

45

0



70

AREA 4R SUMMER

S 50 R 133 F 10

1450 M/S 1500 1550

90

LRAPP

DB LOSS

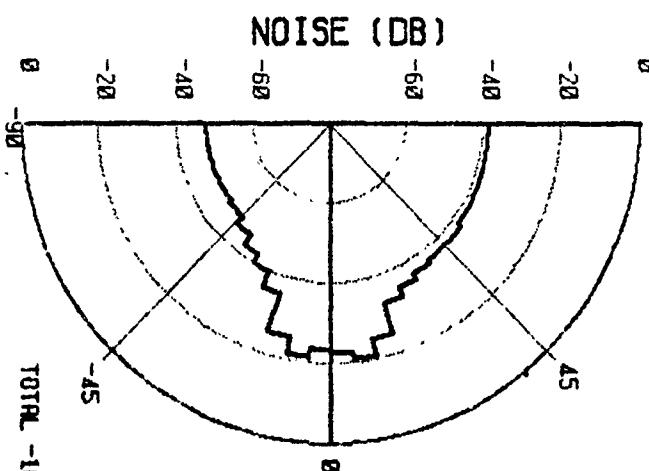
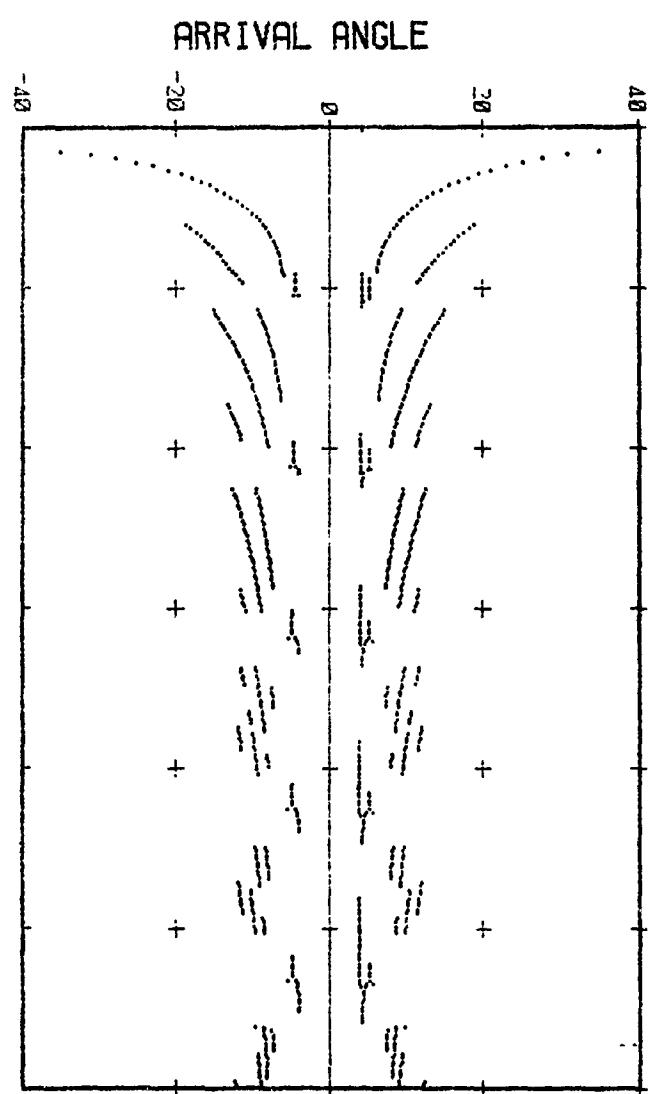
130 110 90 70

-160 -140 -120 -100 -80 -60 -40 -20 0

6000 4000 2000 0

-5-

DEPTH IN METERS



TOTAL -16.8 DB

AREA 4A SUMMER

S 233 R 133 F 10

1450 M/S 1500 1550

DB LOSS

LRAPP

110

120

130

130

110

100

90

80

70

60

50

-6-

100

110

120

130

140

150

160

170

-7-

ARRIVAL ANGLE

RANGE (KILOMETERS)

20

10

0

-10

-20

-30

-40

-50

-60

-20

-10

0

10

20

30

40

50

60

DEPTH IN METERS

20000

40000

60000

80000

100000

120000

140000

160000

180000

200000

NOISE (DB)

0

90

180

270

360

450

540

630

720

810

900

0

90

180

270

360

450

540

630

TOTAL -16.8 DB

70

AFTER 4A SUMMER

S 28 R 300 F 10

1450 M/S 1500 1550

LRAPP

DB LOSS

90

110

130

150

170

190

210

230

250

270

290

310

330

350

370

390

410

430

450

470

490

510

530

550

570

590

610

630

650

670

690

710

730

750

770

790

810

830

850

870

890

910

930

950

970

990

1010

1030

1050

1070

1090

1110

1130

1150

1170

1190

1210

1230

1250

1270

1290

1310

1330

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1370

1390

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1490

1510

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1590

1610

1630

1650

1670

1690

1710

1730

1750

1770

1790

1810

1830

1850

1870

1890

1910

1930

1950

1970

1990

2010

2030

2050

2070

2090

2110

2130

2150

2170

2190

2210

2230

2250

2270

2290

2310

2330

2350

2370

2390

2410

2430

2450

2470

2490

2510

2530

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2810

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2850

2870

2890

2910

2930

2950

2970

2990

3010

3030

3050

3070

3090

3110

3130

3150

3170

3190

3210

3230

3250

3270

3290

3310

3330

3350

3370

3390

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3890

3910

3930

3950

3970

3990

4010

4030

4050

4070

4090

4110

4130

4150

4170

4190

4210

4230

4250

4270

4290

4310

4330

4350

4370

4390

4410

4430

4450

4470

4490

4510

4530

4550

4570

4590

4610

4630

4650

4670

4690

4710

4730

4750

4770

4790

4810

4830

4850

4870

4890

4910

4930

4950

4970

4990

5010

5030

5050

5070

5090

5110

5130

5150

5170

5190

5210

5230

5250

5270

5290

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5330

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5610

5630

5650

5670

5690

5710

5730

5750

5770

5790

5810

5830

5850

5870

5890

5910

5930

5950

5970

5990

6010

6030

6050

6070

6090

6110

6130

6150

6170

6190

6210

6230

6250

6270

6290

6310

6330

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6370

6390

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6890

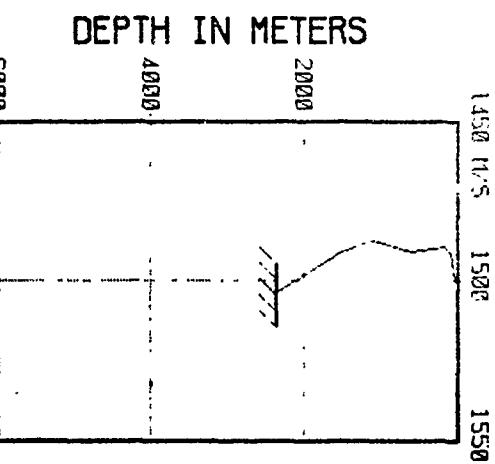
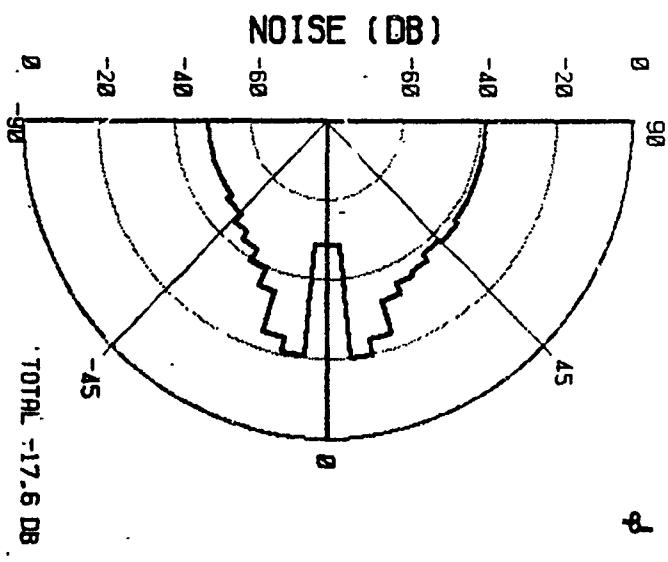
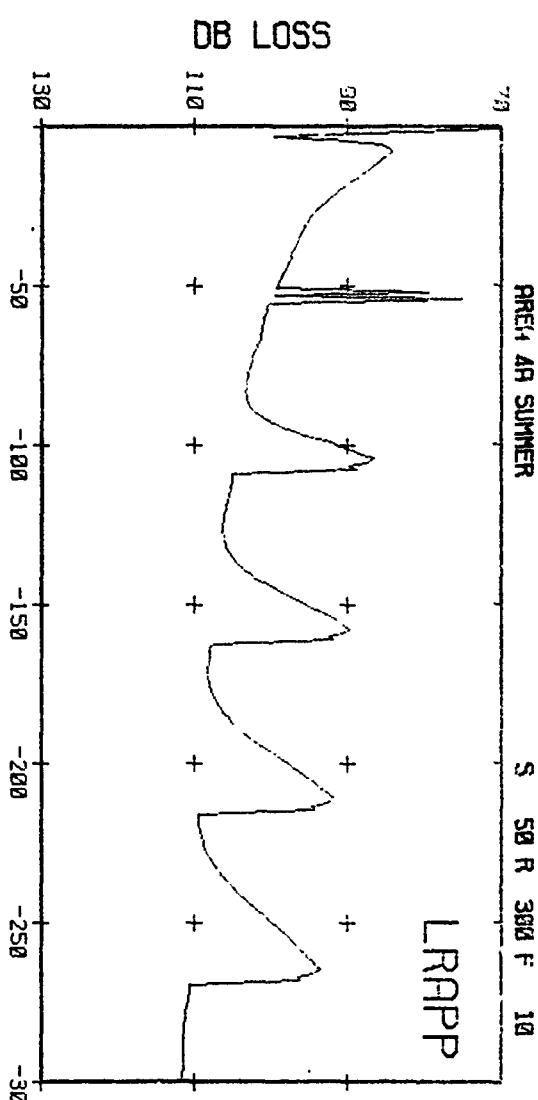
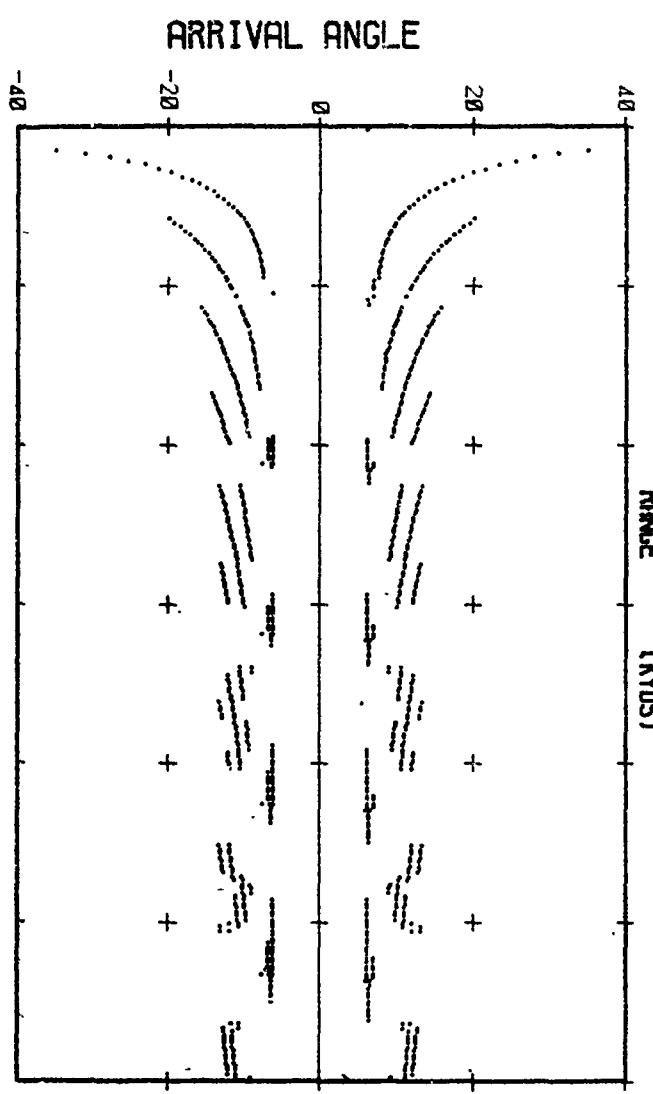
6910

6930

6950

6970

6990



70

AFTER 4R SUMMER

S 235 R 348 F 18

1450 M/S 1500 1550

LRAPP

DB LOSS

110 + + + + +

4000

90

+ + + + +

2000

DEPTH IN METERS

130 + + + + +

6000

20

+ + + + +

90

ARRIVAL ANGLE

-20 + + + + +

0



NOISE (DB)

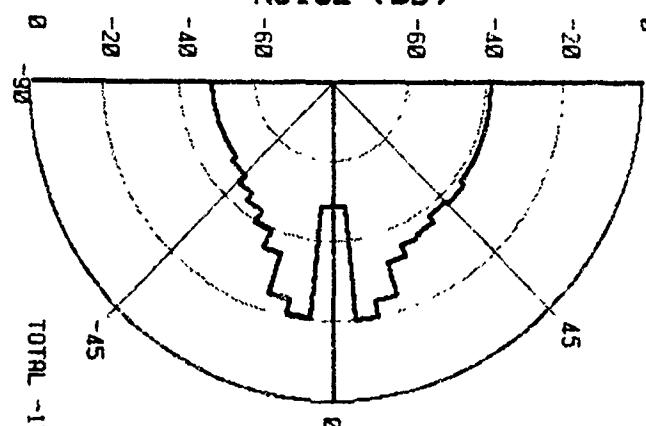
0

-60

-40

-20

90



TOTAL -17.6 DB

-9-

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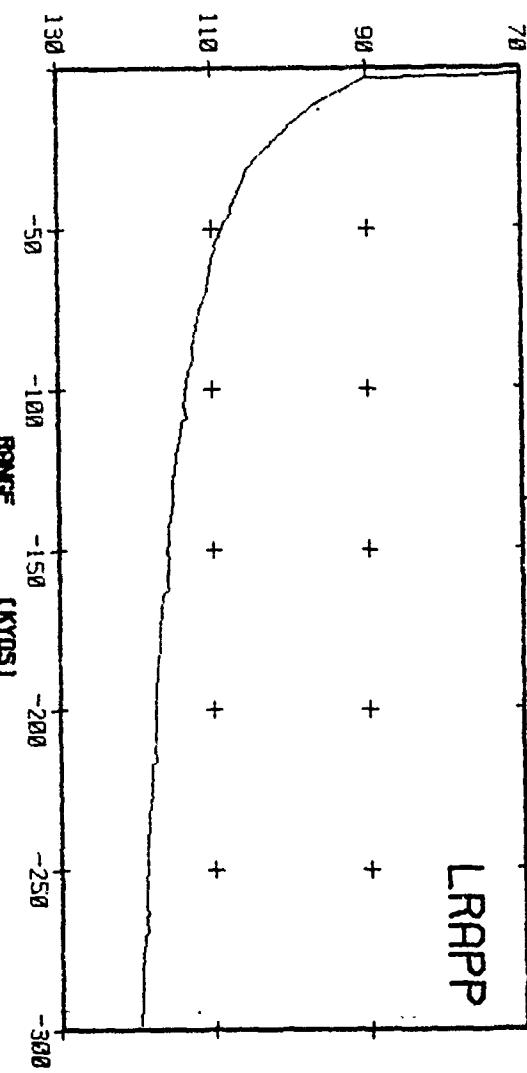
PAPER 49 SUMMER

S 20 R 1000 F 10

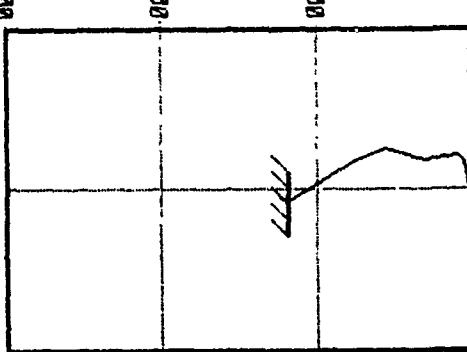
1450 M/S 1500 1550

LRAPP

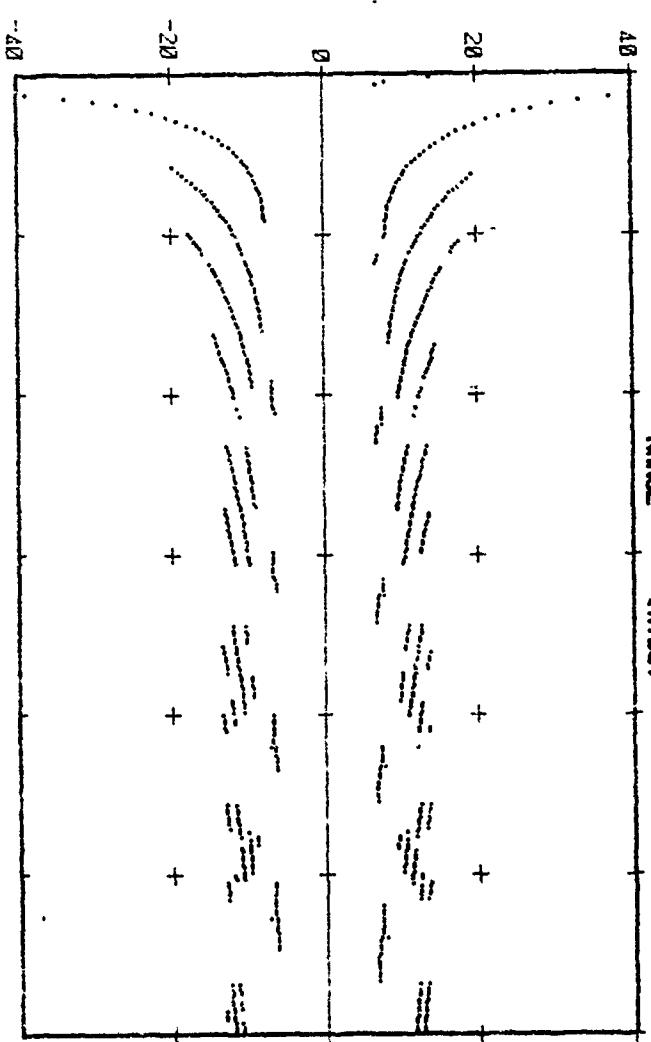
DB LOSS



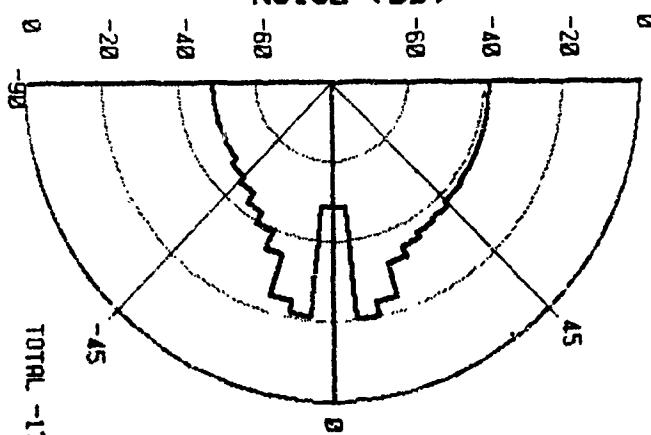
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (dB)



TOTAL -17.7 DB

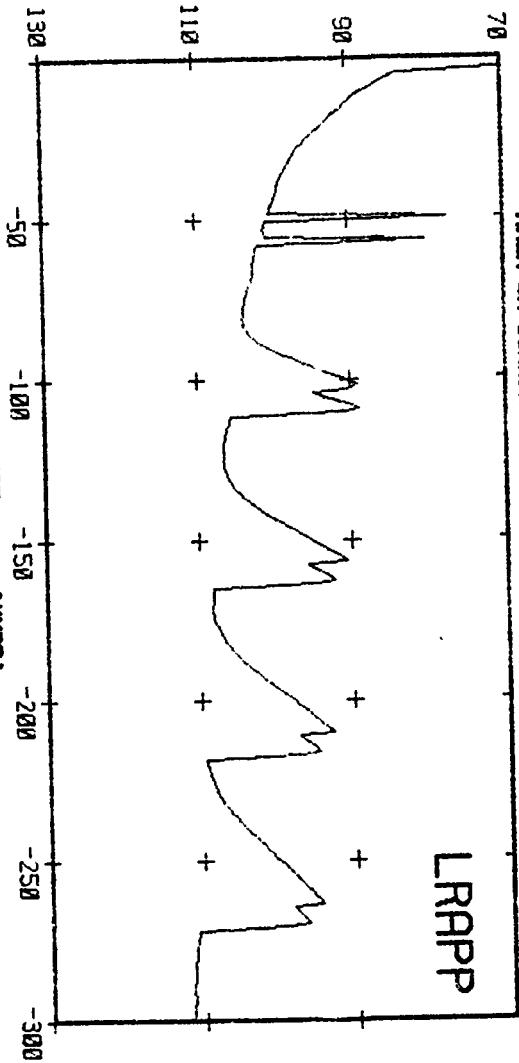
AREA 4H SUMMER

S 50 R 100 F 10

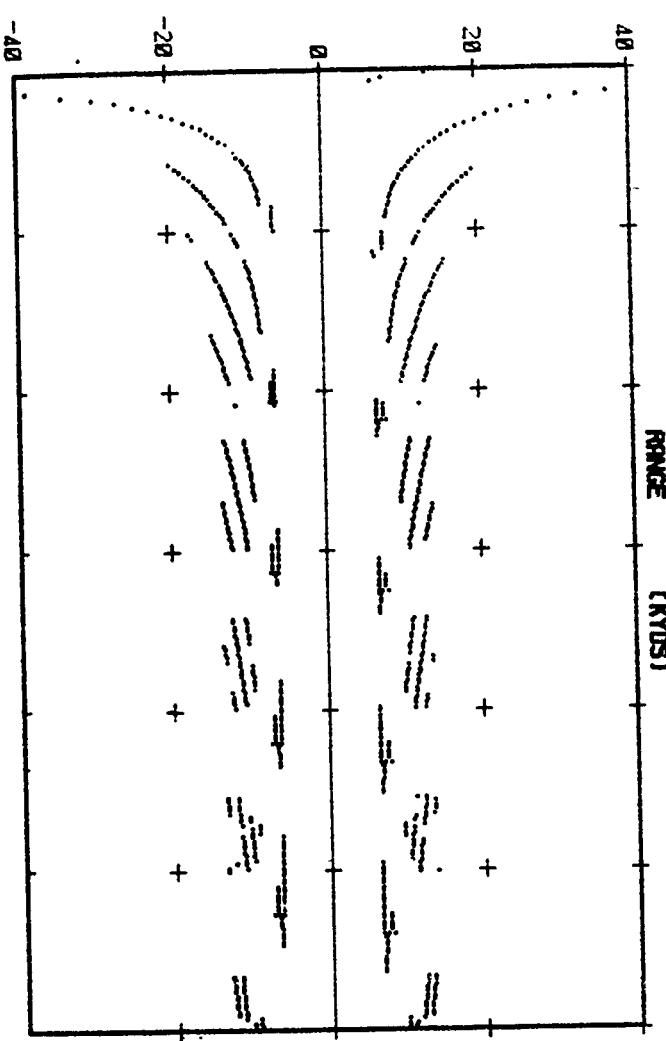
1450 M/S 1500 1550

L RAPP

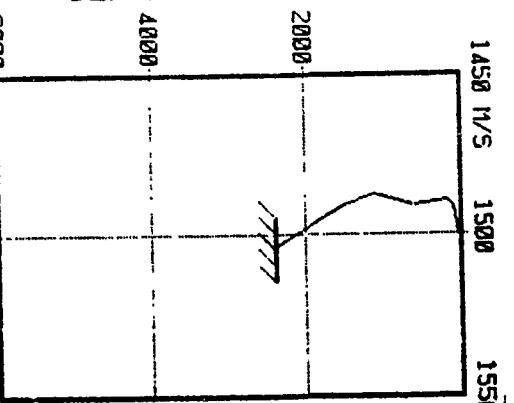
DB LOSS



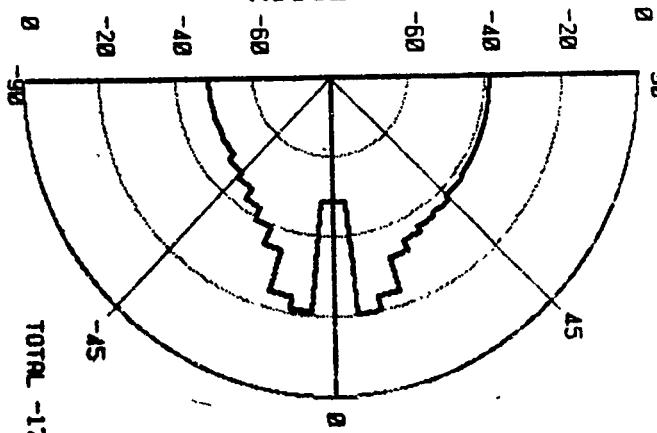
ARRIVAL ANGLE



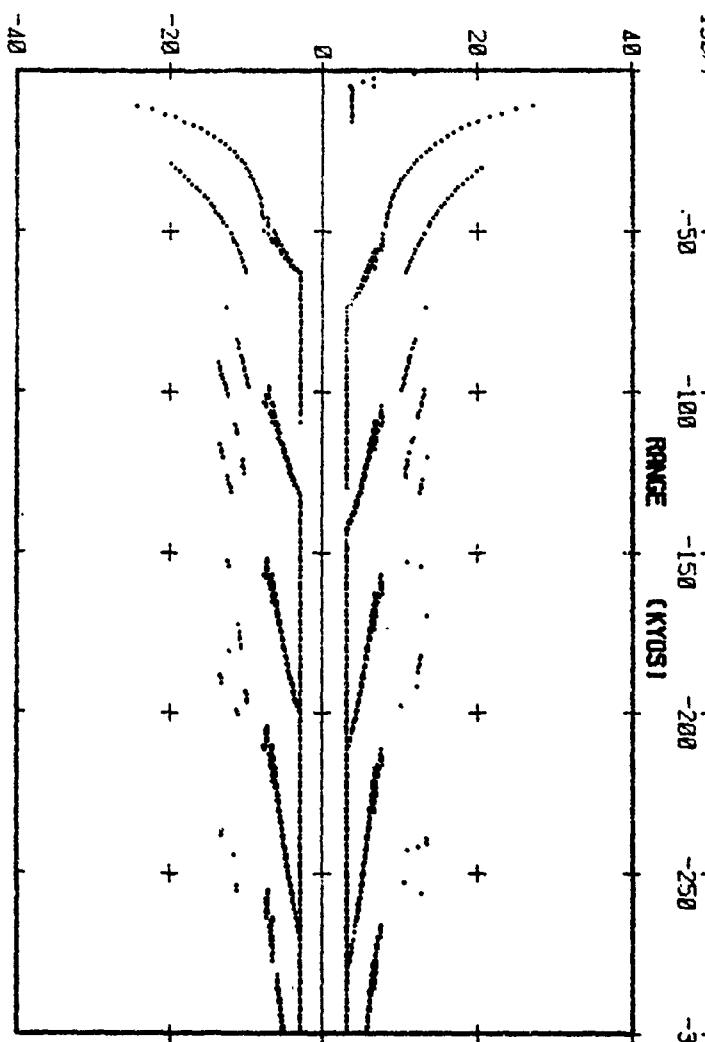
DEPTH IN METERS



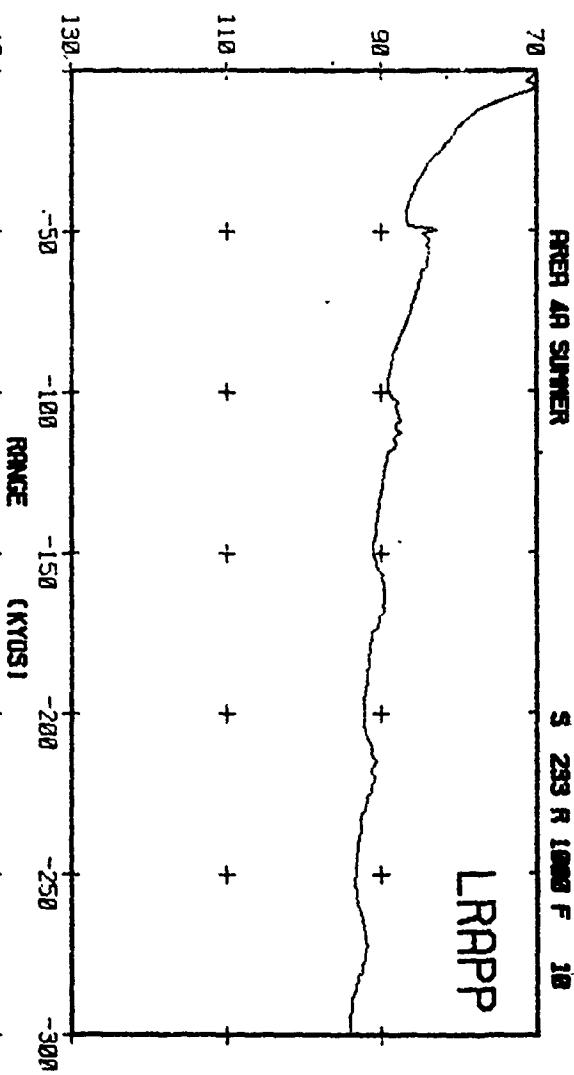
NOISE (DB)



ARRIVAL ANGLE

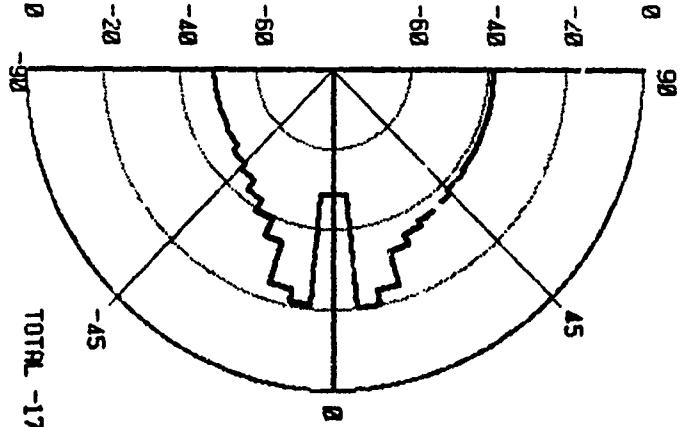


DB LOSS

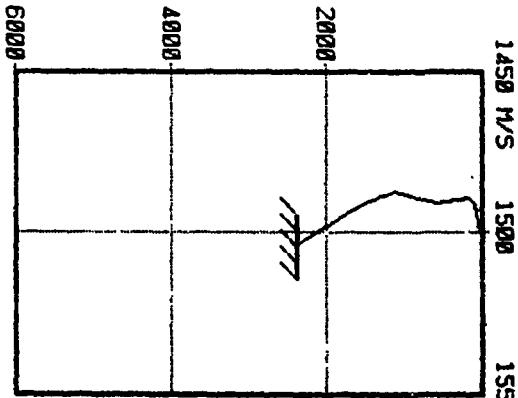


LRAPP

NOISE (DB)



DEPTH IN METERS



AREA 4A SUMMER

S 293 R 1000 F 10

1450 M/S 1500 1550

TOTAL -17.7 DB

70

PRES AIR SUMMER
S 28 R 1500 F 10

5 2000

1450 M/S 1500 1550

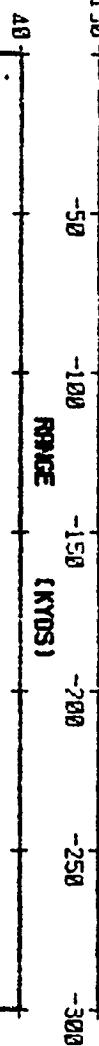
LRAAPP

DB LOSS

90

110

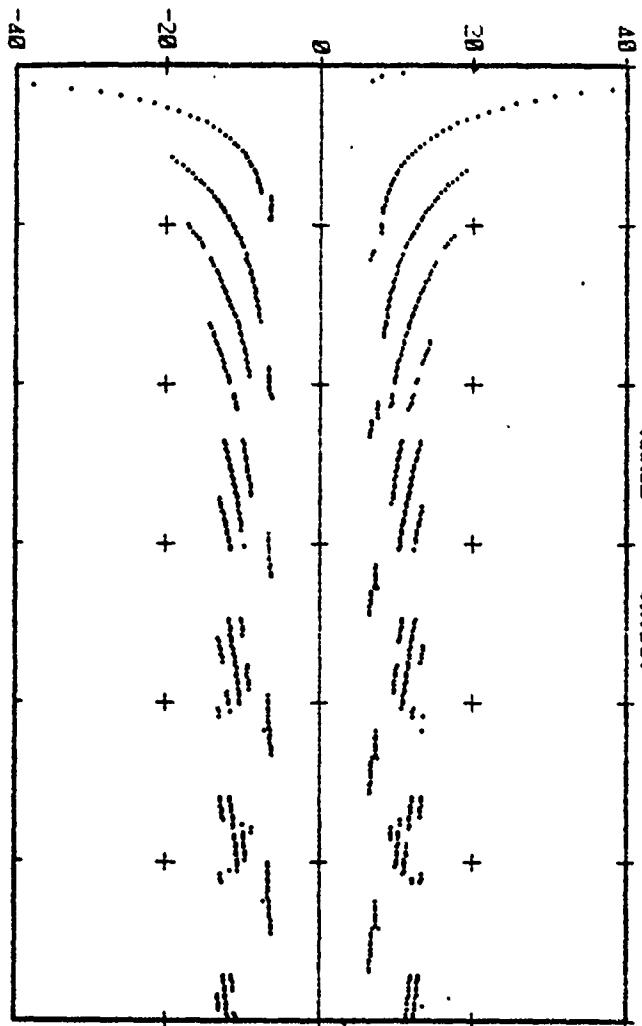
130



ARRIVAL ANGLE

20
0
-20

-40



DEPTH IN METERS

2000
4000

6000

8000

10000

12000

14000

16000

18000

20000

22000

24000

26000

28000

30000

32000

34000

36000

38000

40000

42000

44000

46000

48000

50000

52000

54000

56000

58000

60000

62000

64000

66000

68000

70000

72000

74000

76000

78000

80000

82000

84000

86000

88000

90000

92000

94000

96000

98000

100000

102000

104000

106000

108000

110000

112000

114000

116000

118000

120000

122000

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434000

436000

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442000

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452000

454000

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474000

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480000

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494000

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498000

500000

502000

504000

506000

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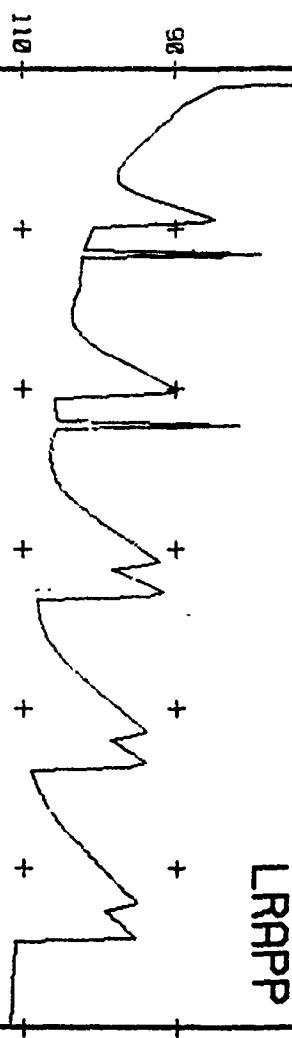
AREA 4A SUMMER

S 50 R 1500 F. 10

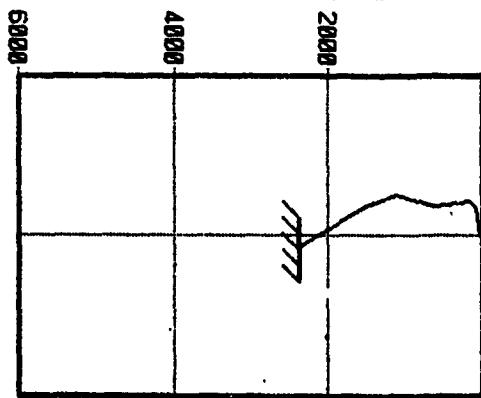
1450 M/S 1500 1550

LRAPP

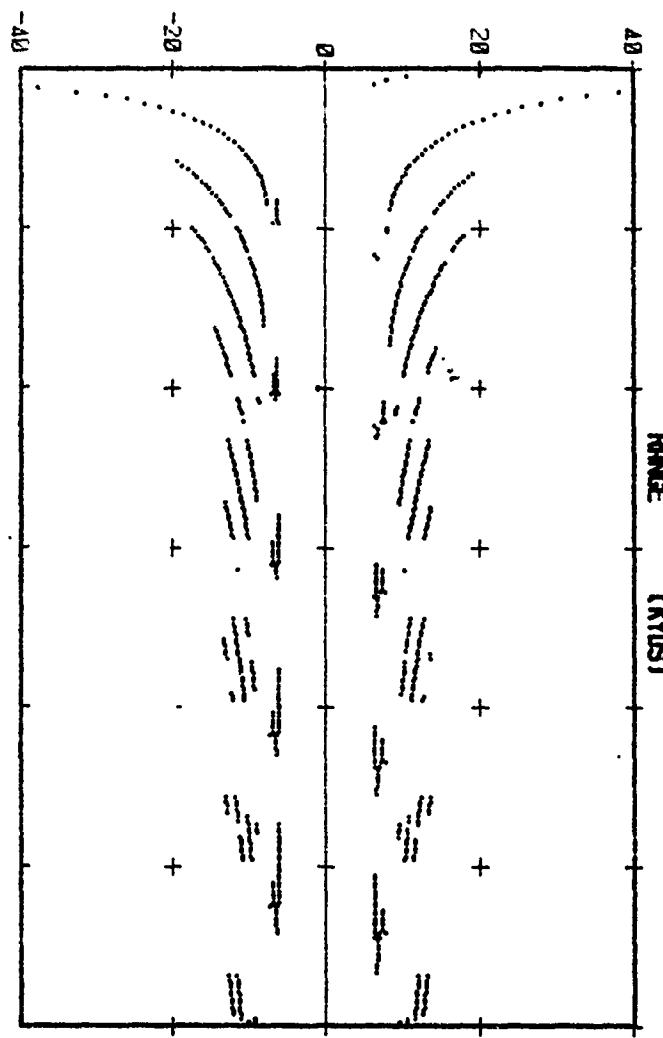
DB LOSS



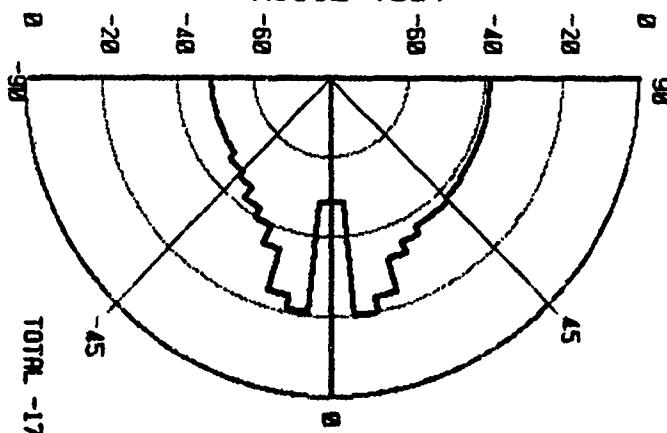
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)



TOTAL -17.7 DB

S 23° R 150° F 10

1450 M/S 1500 1550

L RAPP

DB LOSS

DEPTH IN METERS

40000

20000

0

130
100
-50
-100
-150
-200
-250
-300

0

40

B

20

-20

-40

-60

-80

-100

-120

-140

-160

-180

-200

-220

-240

-260

-280

-300

-320

-340

-360

-380

-400

-420

-440

-460

-480

-500

-520

-540

-560

-580

-600

-620

-640

-660

-680

-700

-720

-740

-760

-780

-800

-820

-840

-860

-880

-900

-920

-940

-960

-980

-1000

-1020

-1040

-1060

-1080

-1100

-1120

-1140

-1160

-1180

-1200

-1220

-1240

-1260

-1280

-1300

-1320

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-1500

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-1560

-1580

-1600

-1620

-1640

-1660

-1680

-1700

-1720

-1740

-1760

-1780

-1800

-1820

-1840

-1860

-1880

-1900

-1920

-1940

-1960

-1980

-2000

-2020

-2040

-2060

-2080

-2100

-2120

-2140

-2160

-2180

-2200

-2220

-2240

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-2280

-2300

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-2600

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-2700

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-2760

-2780

-2800

-2820

-2840

-2860

-2880

-2900

-2920

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-3000

-3020

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-3100

-3120

-3140

-3160

-3180

-3200

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-3240

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-3900

-3920

-3940

-3960

-3980

-4000

-4020

-4040

-4060

-4080

-4100

-4120

-4140

-4160

-4180

-4200

-4220

-4240

-4260

-4280

-4300

-4320

-4340

-4360

-4380

-4400

-4420

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-4900

-4920

-4940

-4960

-4980

-5000

-5020

-5040

-5060

-5080

-5100

-5120

-5140

-5160

-5180

-5200

-5220

-5240

-5260

-5280

-5300

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-5920

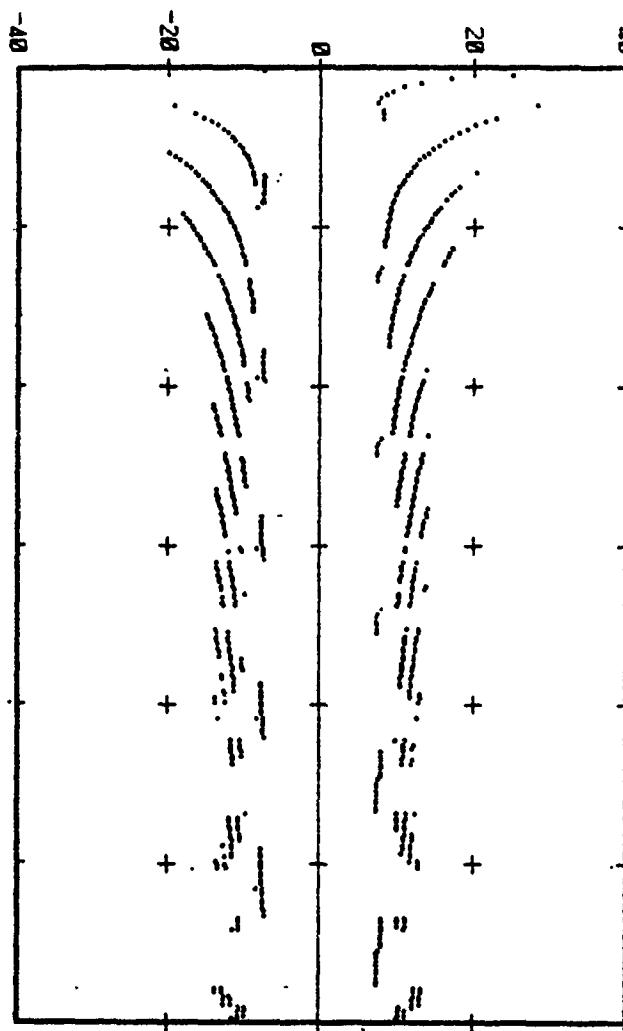
-5940

-5960

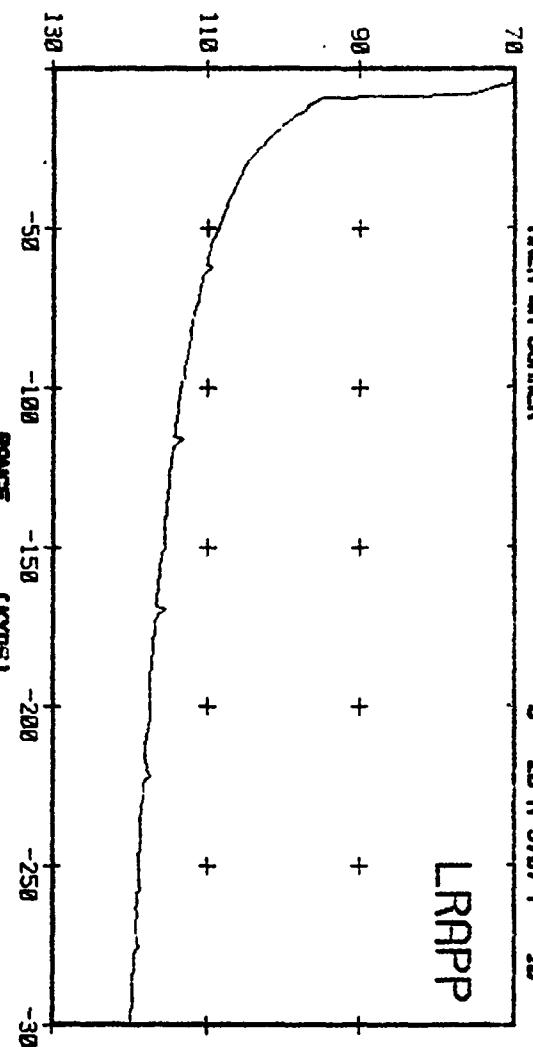
-5980

-6000

ARRIVAL ANGLE

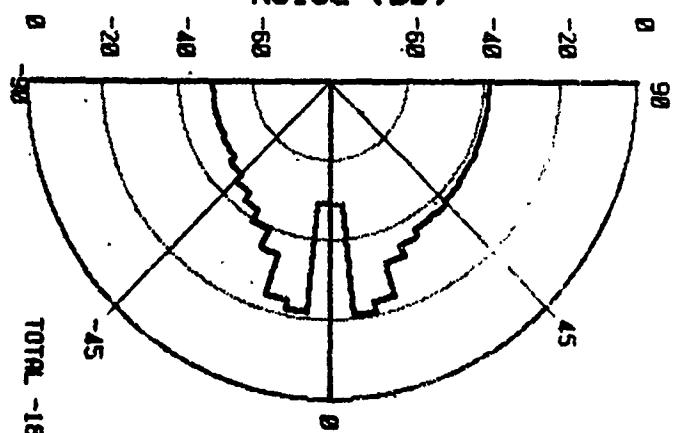


DB LOSS

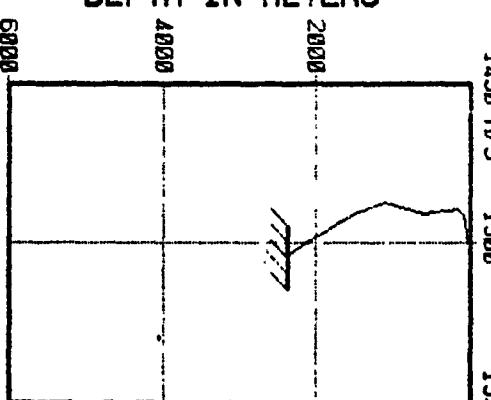


LRRAPP

NOISE (DB)



DEPTH IN METERS



1450 M/S 1500 1550

TOTAL -18.0 DB

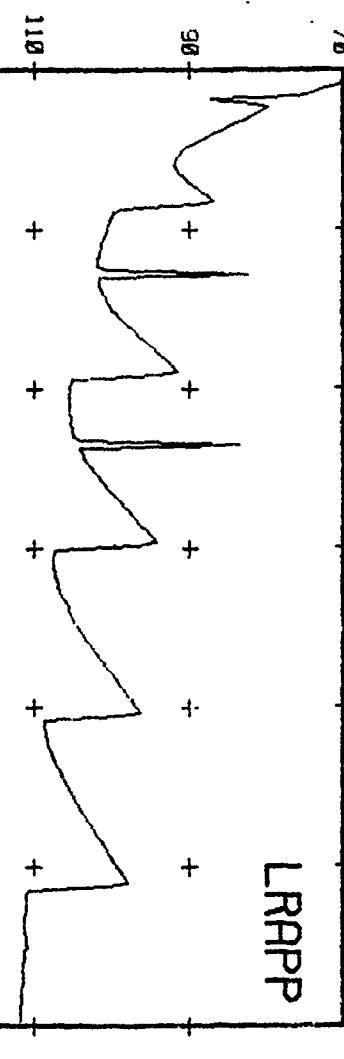
7B

ATLANTIC SUMMER

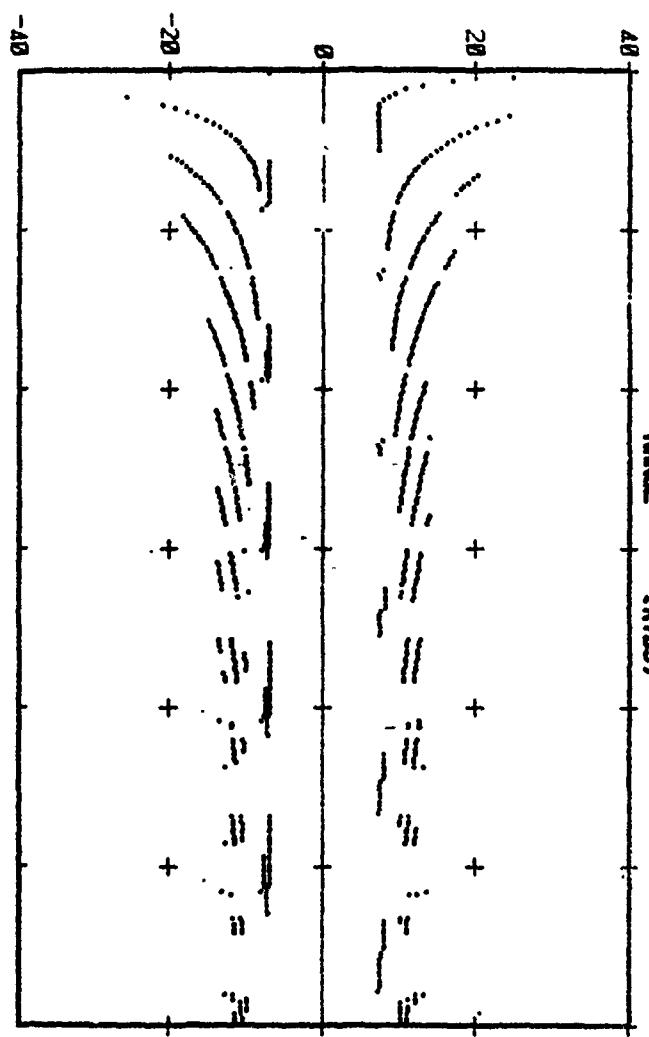
S 58R 57W F 18

1450 m/s 1500 1550

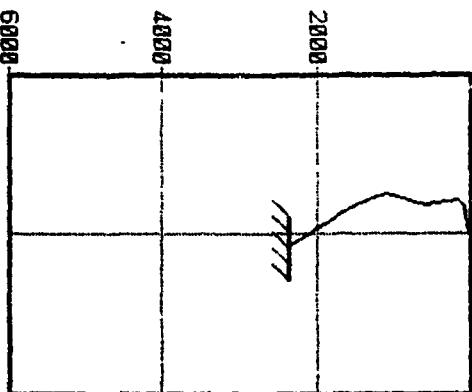
DB LOSS



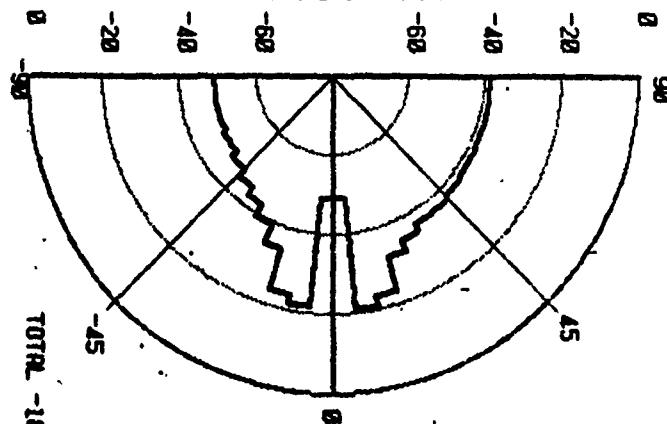
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



78

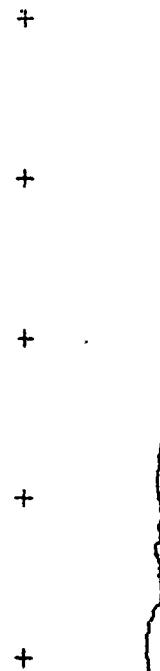
AREA 4A SUMMER

S 233 R 3707 F 18

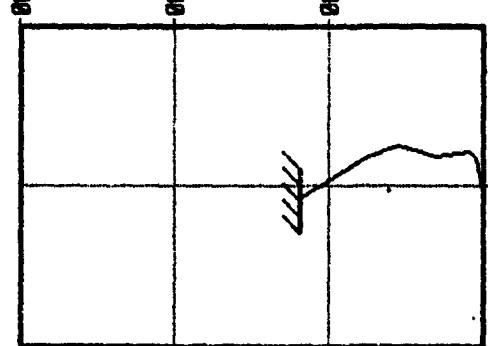
1458 M/S 1508 1558

LRAPP

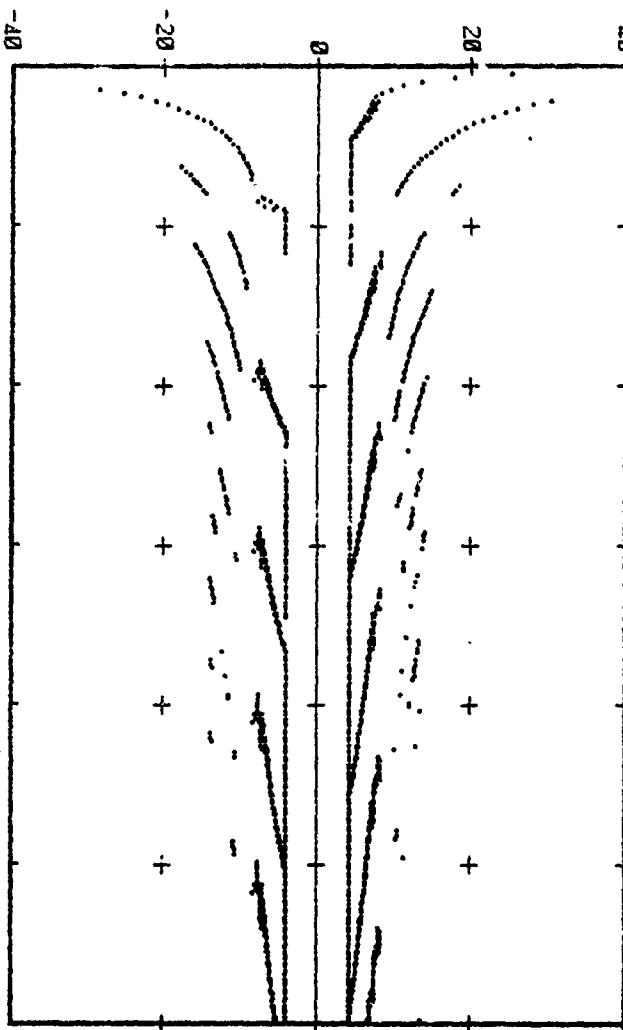
DB LOSS

130
110
90
70

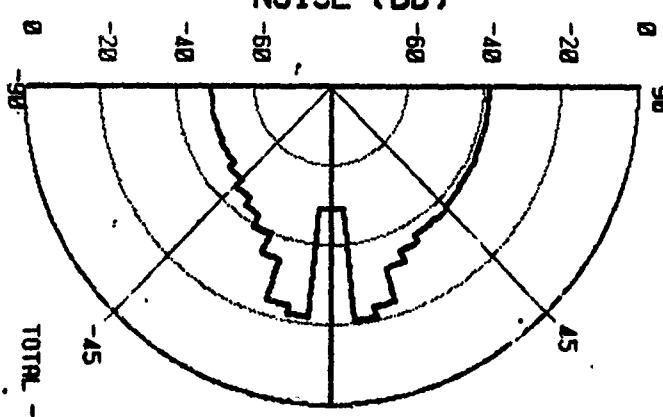
DEPTH IN METERS

6000
4000
2000

ARRIVAL ANGLE



NOISE (DB)

0
-20
-40
-60
-80

TOTAL -18.0 DB

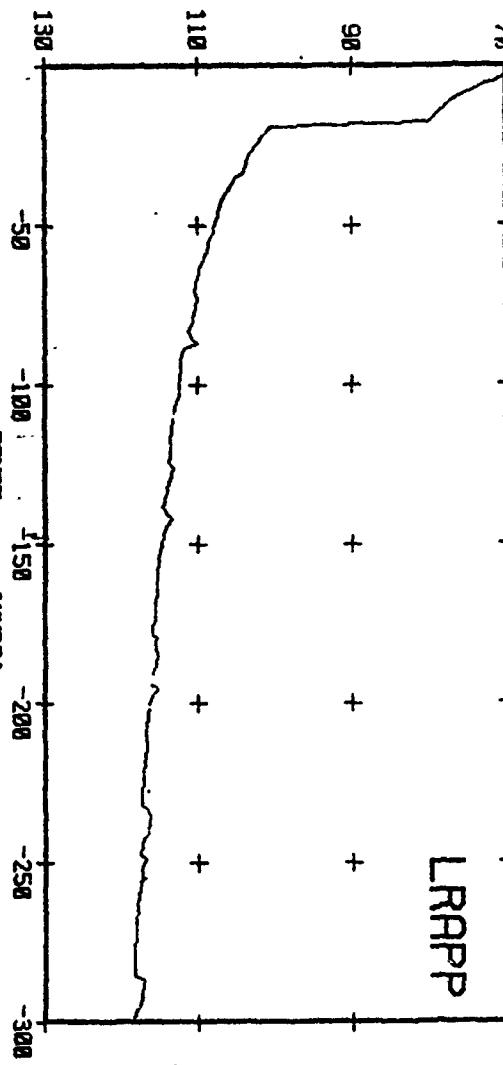
AREA 4R SUMMER

S 20 R 6558 F 10

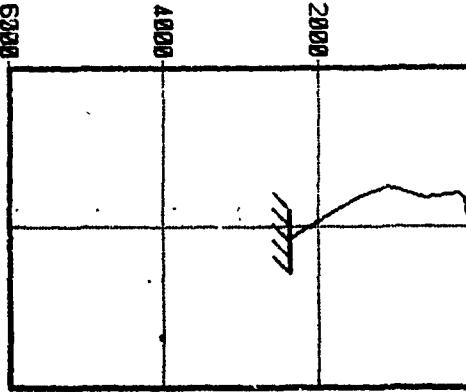
1450 M/S 1500 1550

LRAFP

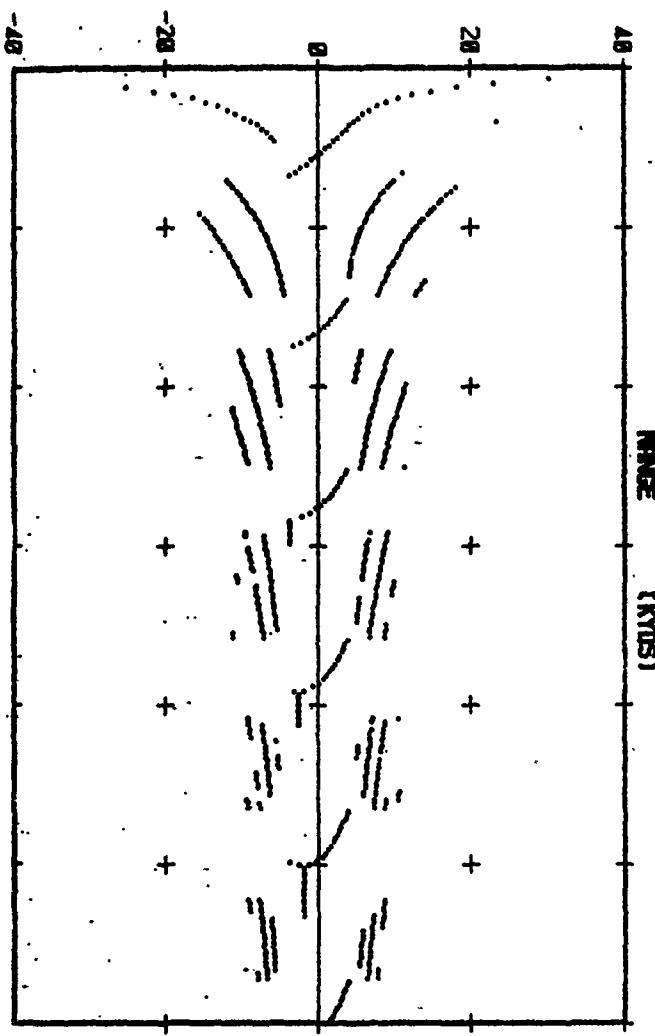
DB LOSS



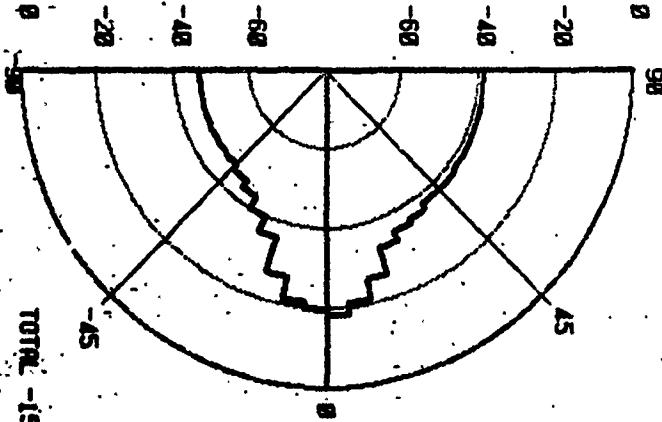
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)

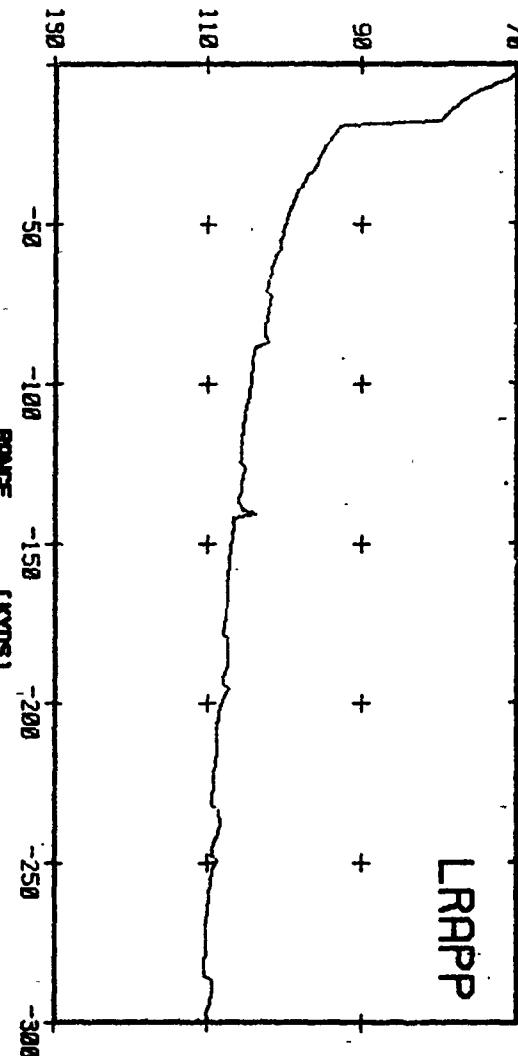


ANER 4A SUMMER

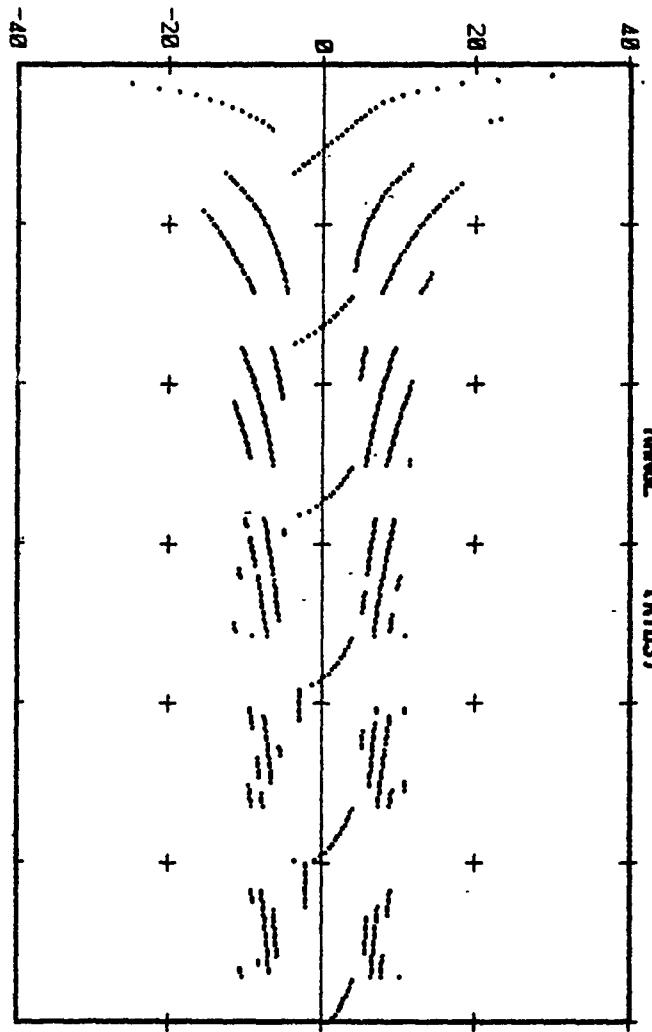
S 50 R 0658 F 10

1450 M/S 1500 1550

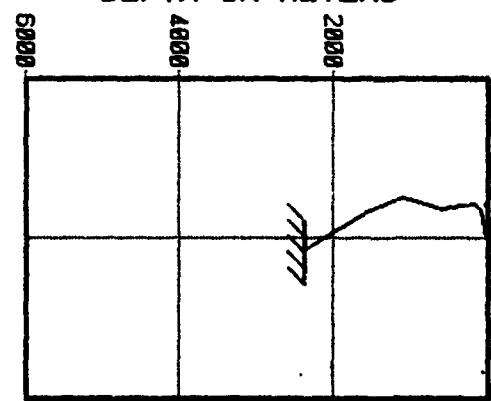
DB LOSS



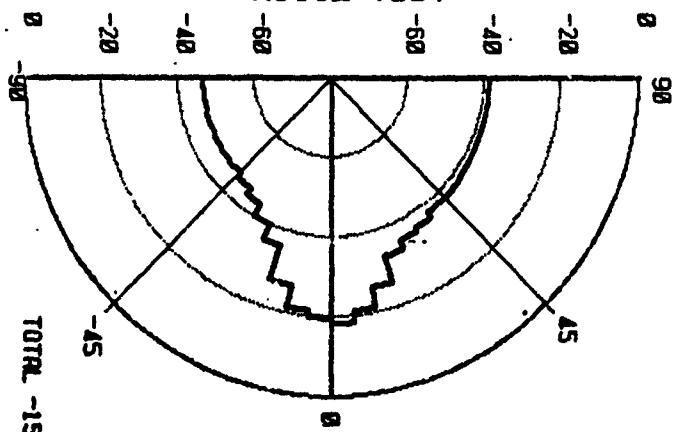
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



TOTAL -15.4 DB

70

REAR 4P SLEIGH

S 233 R 6558 F 10

1458 M/S 1500 1558

90

LRAAPP

DB LOSS

110

130

-50

40

100

-100

-150

-200

-250

-300

150

-200

-250

-300

-350

-400

-450

-500

-550

180

-200

-250

-300

-350

-400

-450

-500

-550

210

-200

-250

-300

-350

-400

-450

-500

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240

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390

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780

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-250

-300

-350

-400

-450

-500

-550

810

-200

-250

-300

-350

-400

-450

-500

-550

840

-200

-250

-300

-350

-400

-450

-500

-550

870

-200

-250

-300

-350

-400

-450

-500

-550

900

-200

-250

-300

-350

-400

-450

-500

-550

930

-200

-250

-300

-350

-400

-450

-500

-550

960

-200

-250

-300

-350

-400

-450

-500

-550

990

-200

-250

-300

-350

-400

-450

-500

-550

1020

-200

-250

-300

-350

-400

-450

-500

-550

1050

-200

-250

-300

-350

-400

-450

-500

-550

1080

-200

-250

-300

-350

-400

-450

-500

-550

1110

-200

-250

-300

-350

-400

-450

-500

-550

1140

-200

-250

AREA 4A SUMMER

S 20 R 7798 F 10

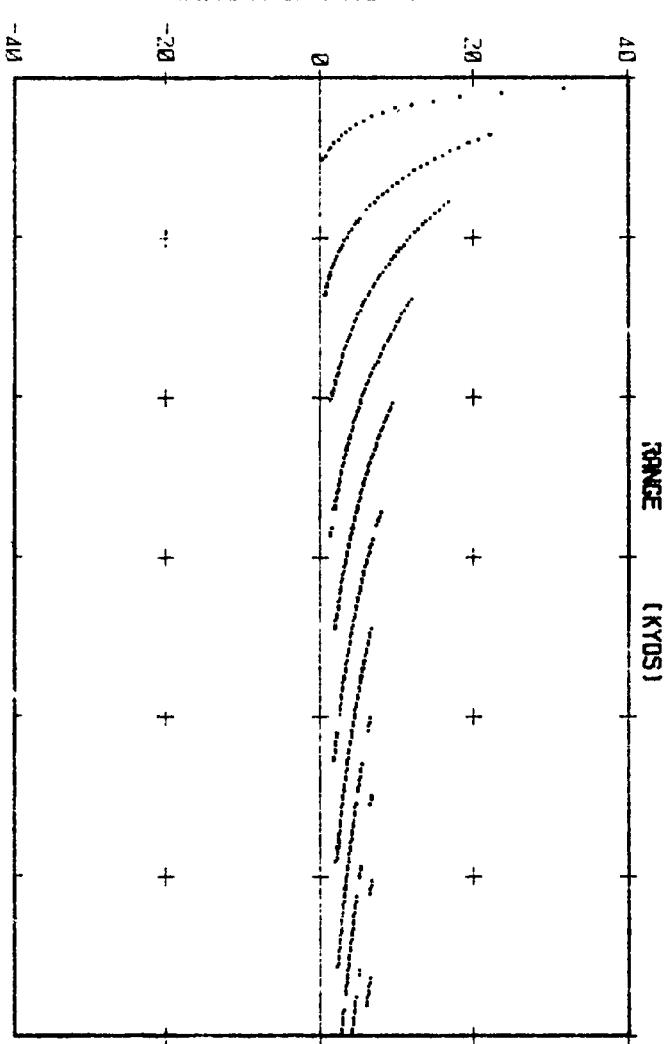
1450 M/S 1500 1550

LRAPP

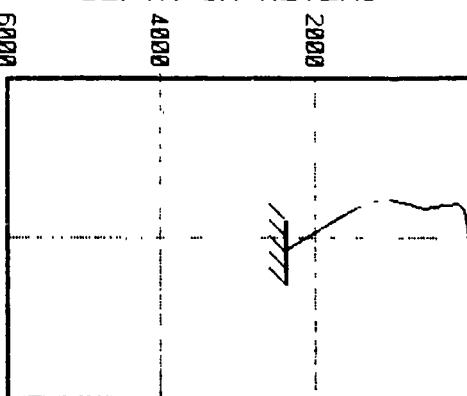
DB LOSS



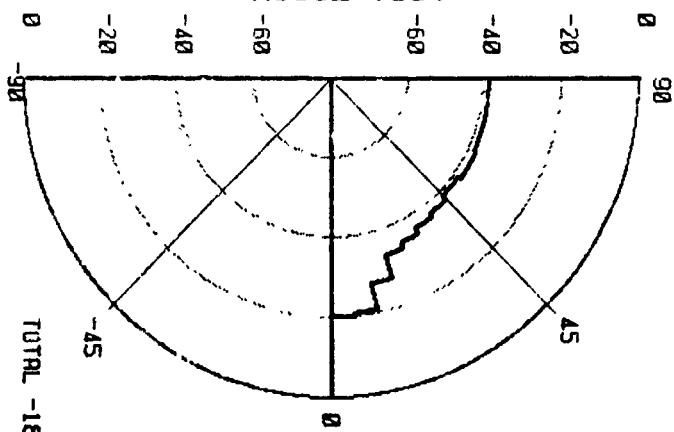
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



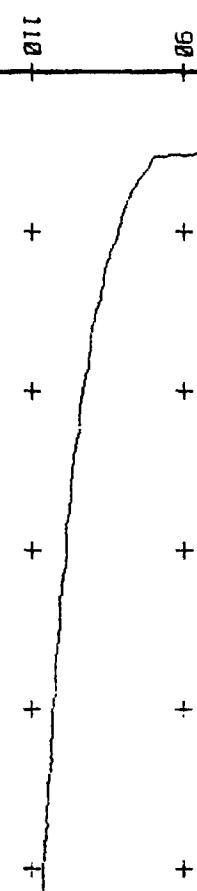
70

AFTER 4A SUMMER

S 50 R 7708 F 10

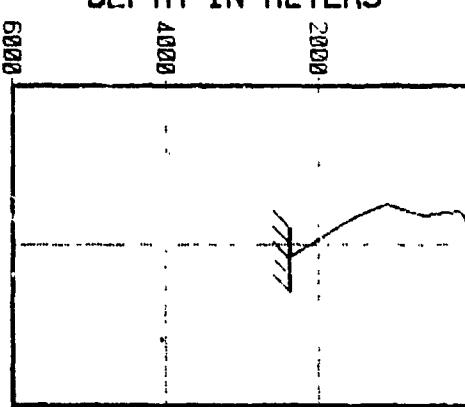
1450 M/S 1500 1550

DB LOSS

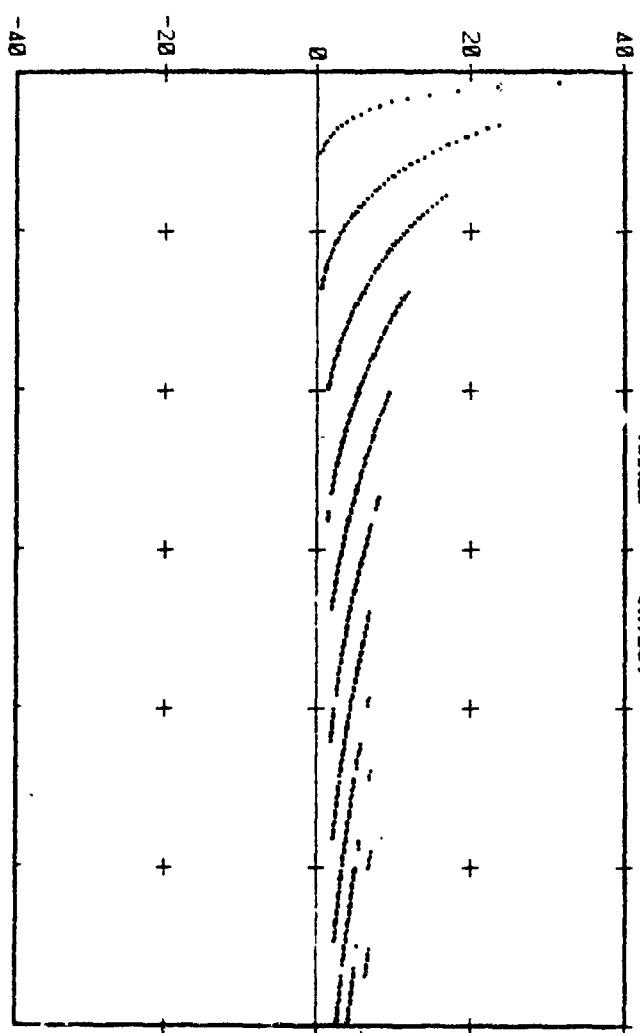


LRAPP

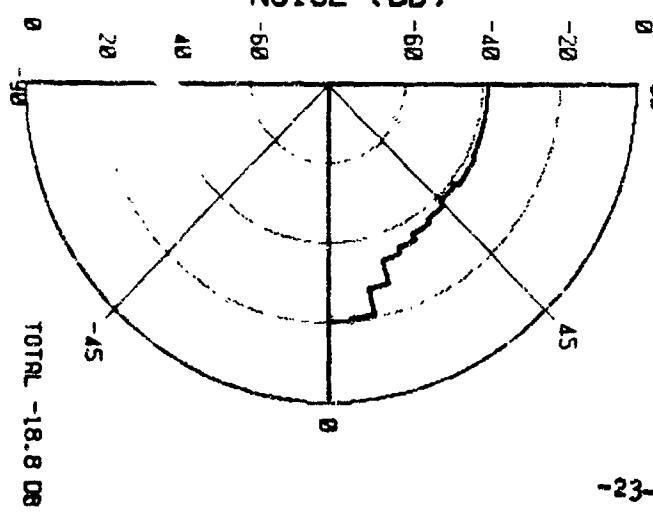
DEPTH IN METERS



ARRIVAL ANGLE



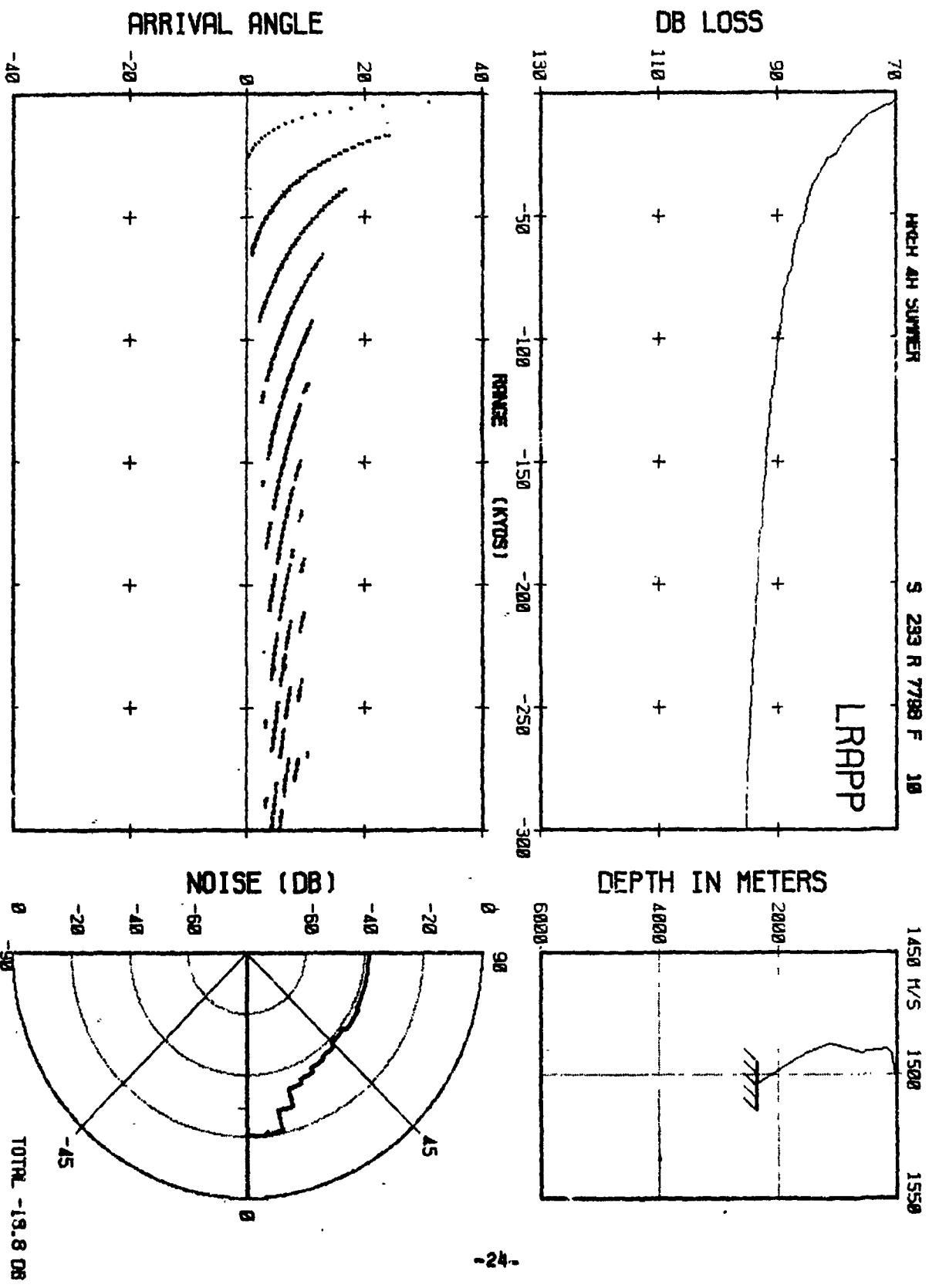
NOISE (DB)



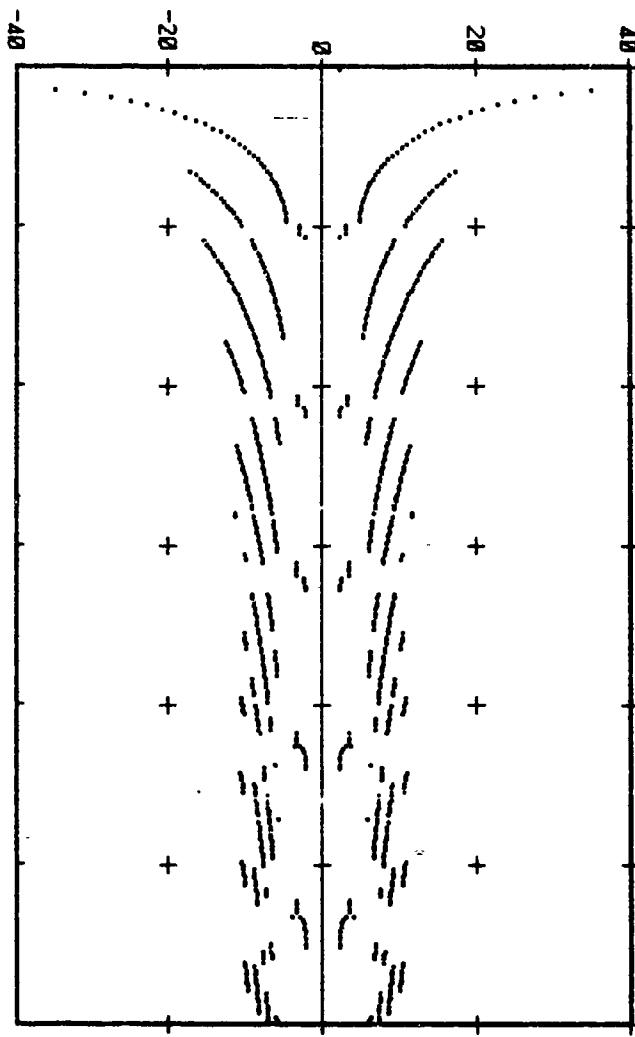
TOTAL -18.8 DB

-23-

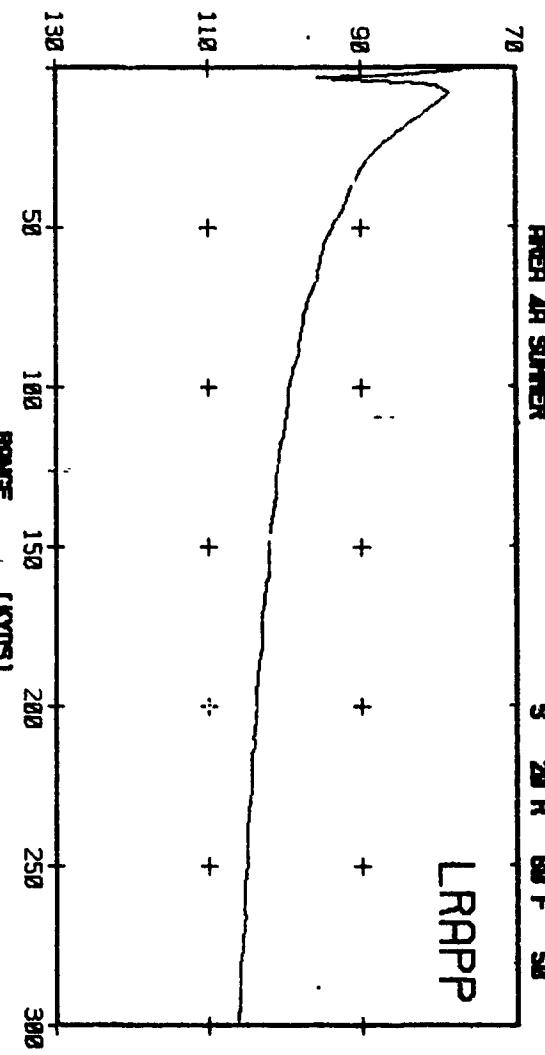
Copy available to DDC does not
permit fully legible reproduction



ARRIVAL ANGLE



DB LOSS



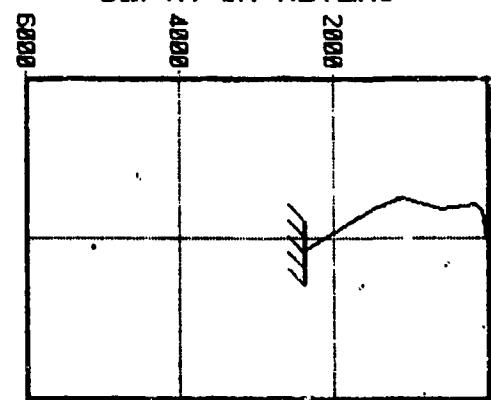
AREA 4A SUMMER

S 20 R 60 F 50

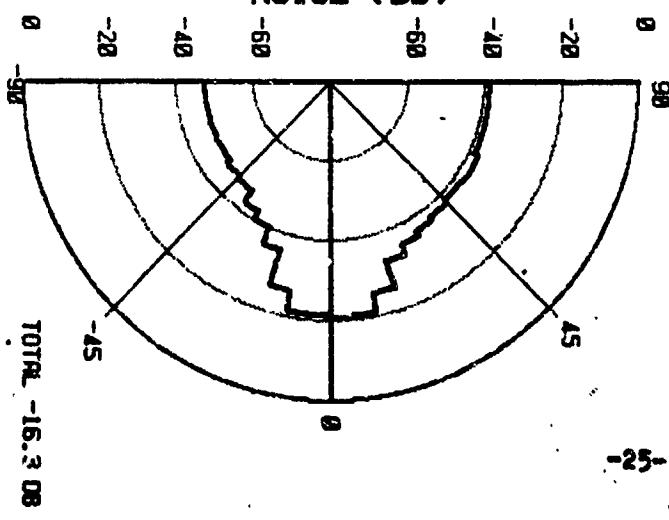
L RAPP

1450 M/S 1520 1550

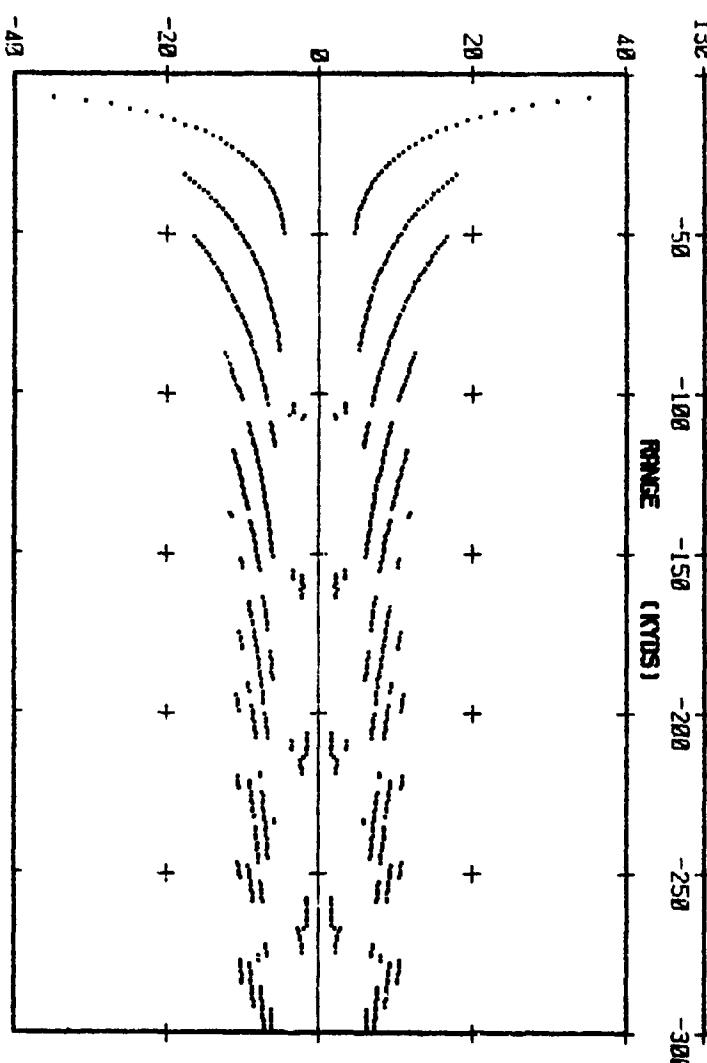
DEPTH IN METERS



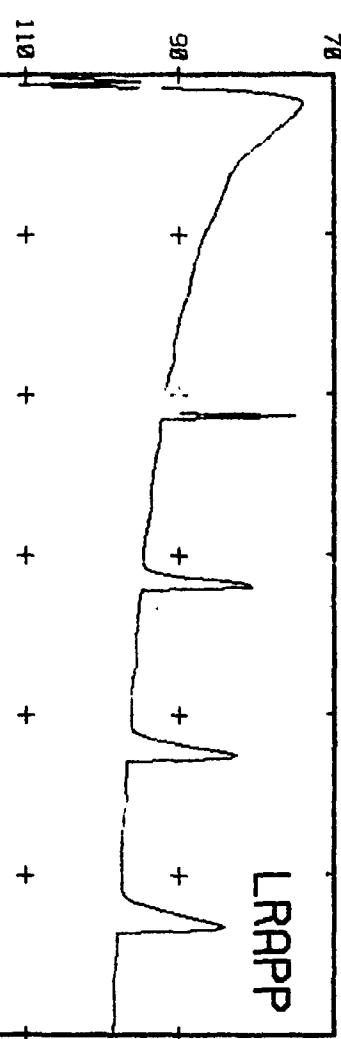
NOISE (DB)



ARRIVAL ANGLE

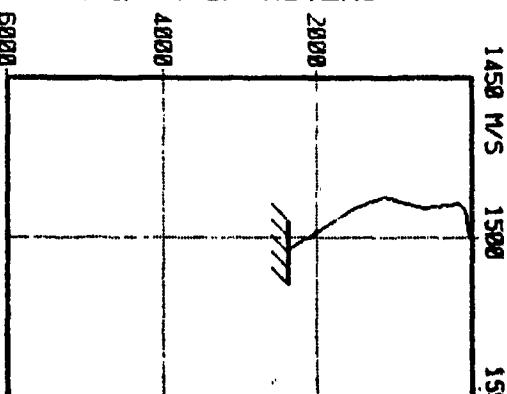


DB LOSS

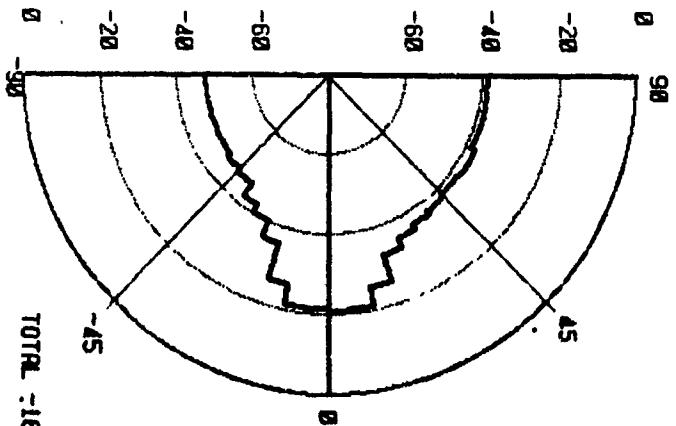


LRAPP

DEPTH IN METERS

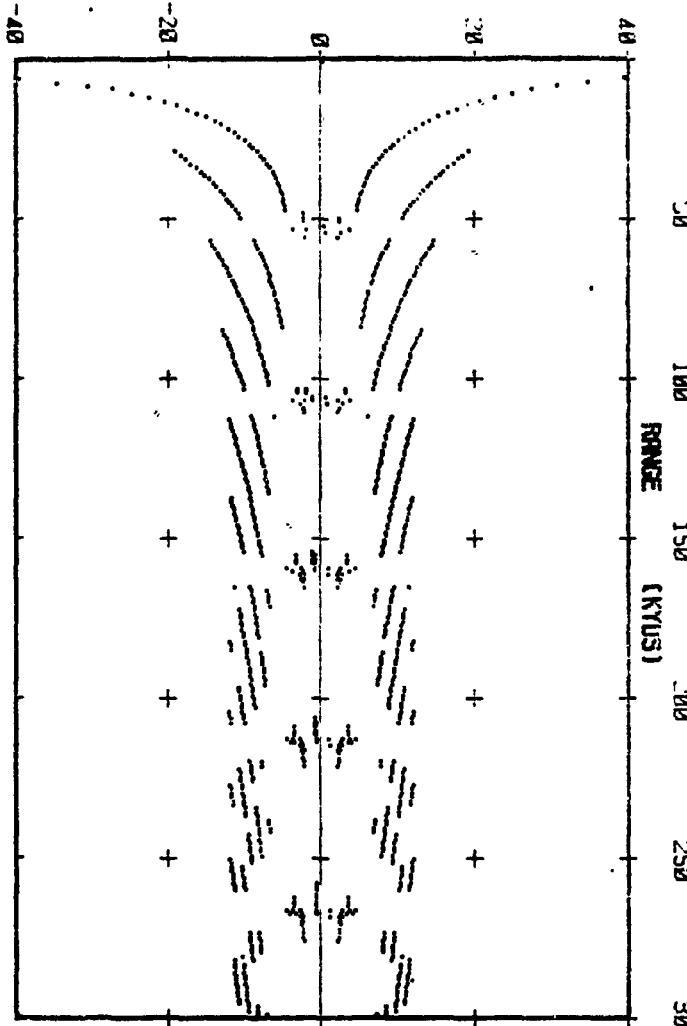


NOISE (DB)

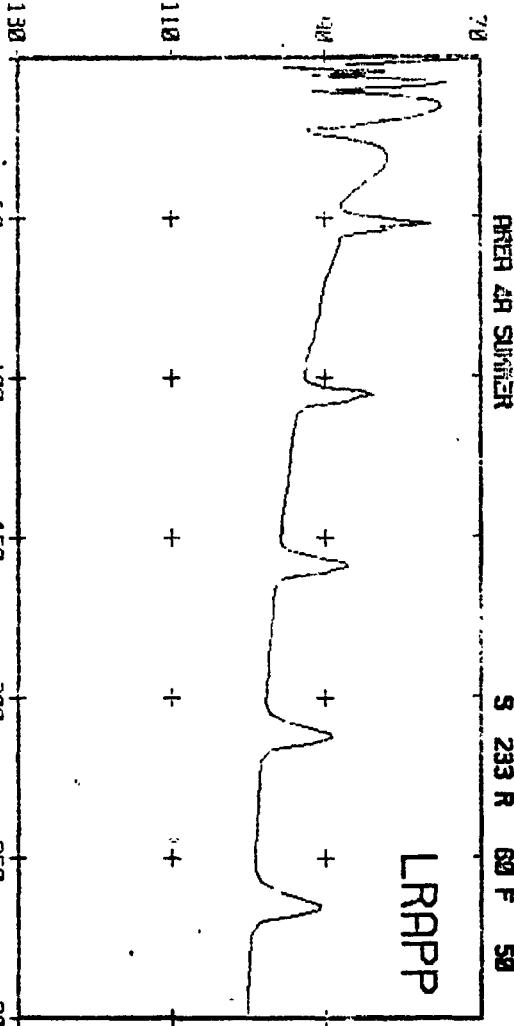


TOTAL : 16.3 DB

ARRIVAL ANGLE



DB LOSS

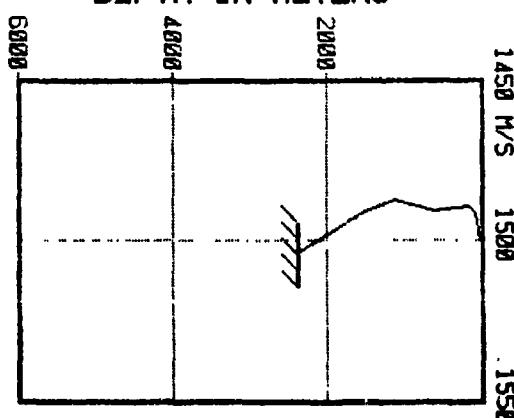


PRED 4H SUMMER

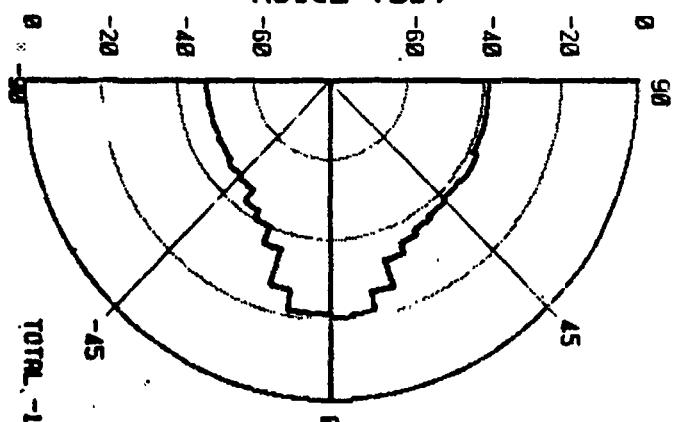
S 233 R 69 F 50

LRAFP

DEPTH IN METERS



NOISE (DB)



Total -16.3 dB

70

ARR 4R SUMMER

S 20 R 193 F 59

1450 M/S 1500 1550

LRAPP

DB LOSS

130
110
90

110

90

70

50

30

10

0

RANGE (KNOTS)

40

20

0

-20

-40

-60

-80

-100

-120

-140

-160

-180

-200

-220

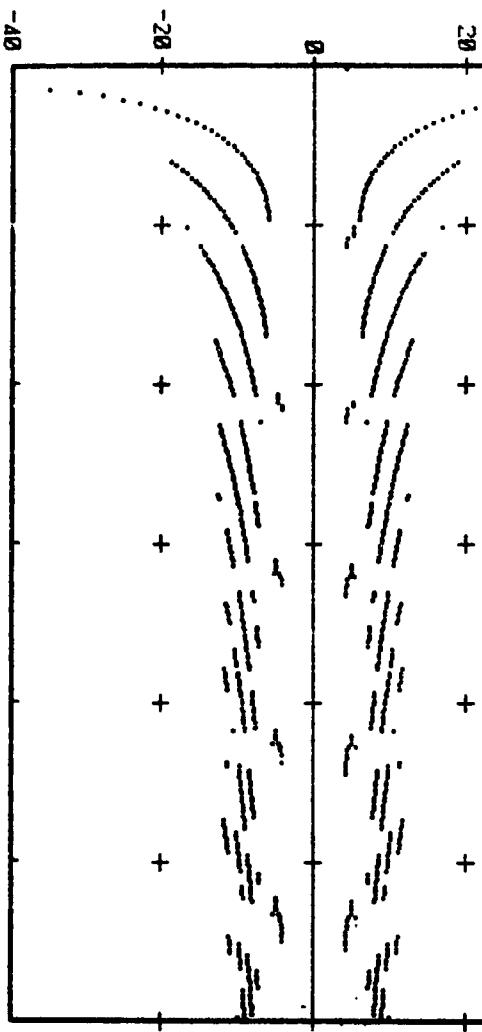
-240

-260

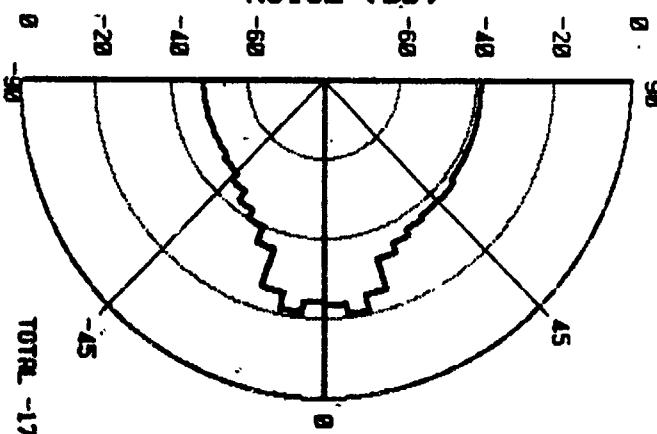
-280

-300

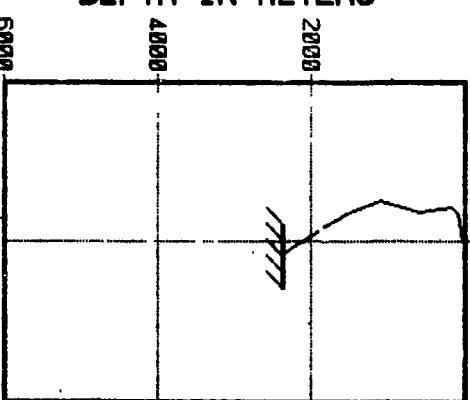
ARRIVAL ANGLE



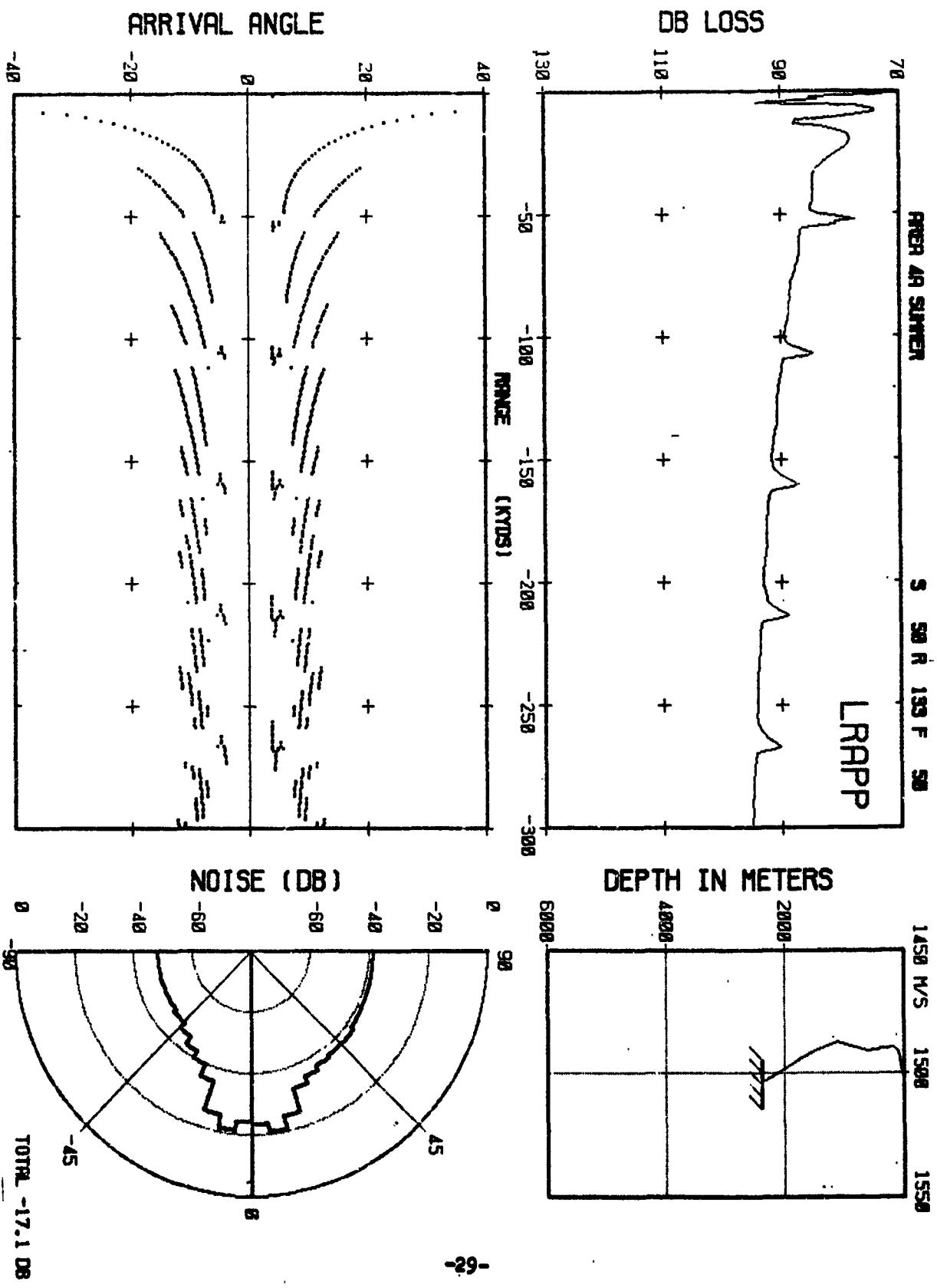
NOISE (DB)

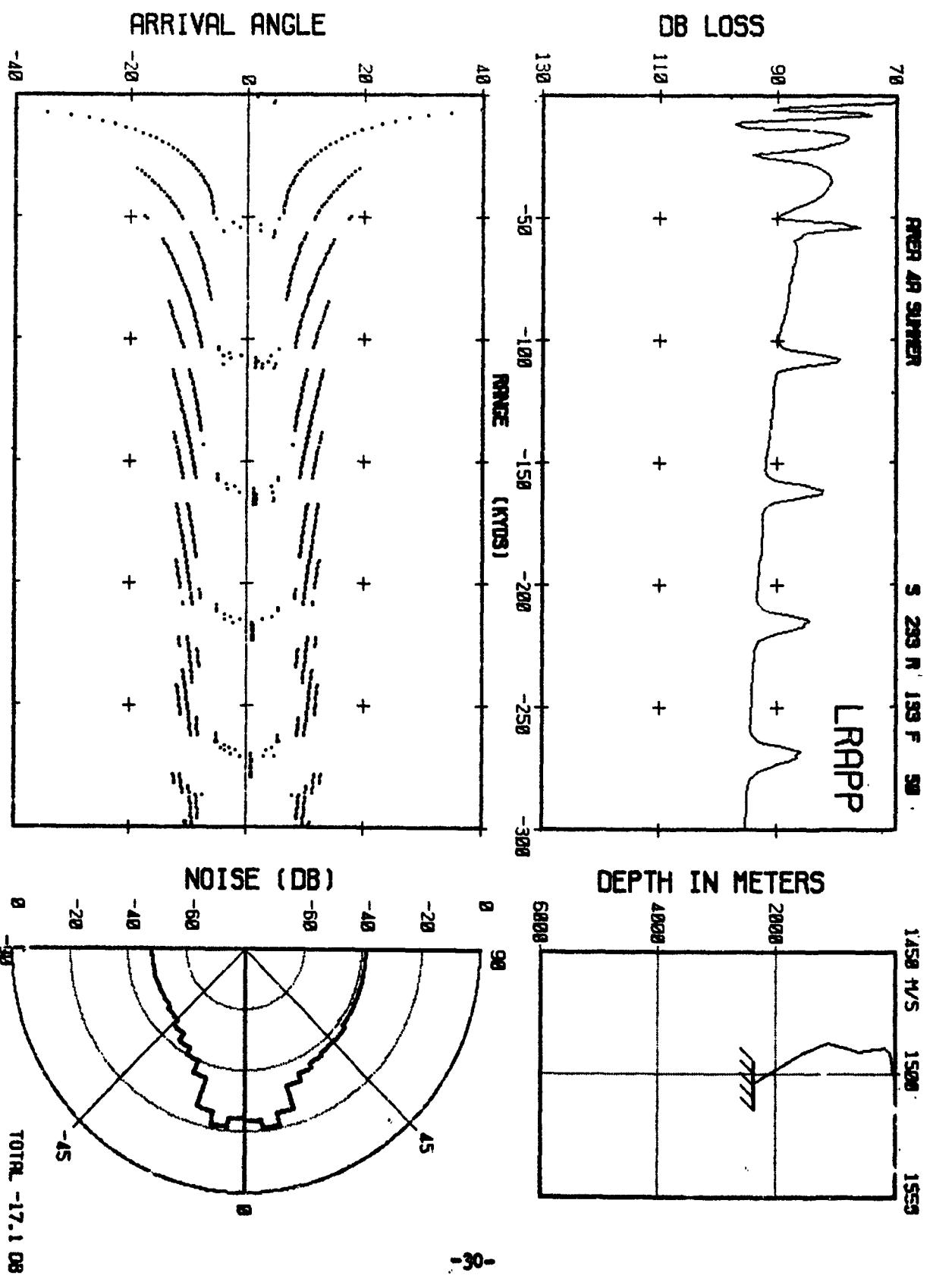


DEPTH IN METERS



TONE -17.1 DB





70

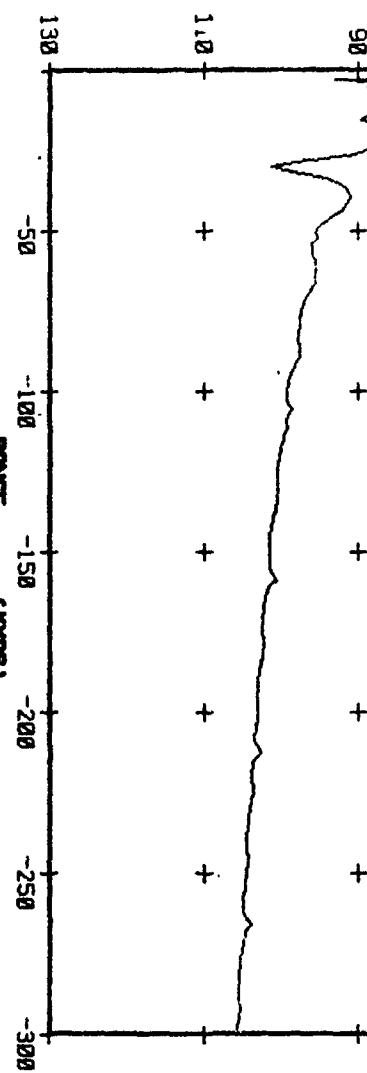
ARR 4A SUMMER

S 20 R 300 F 50

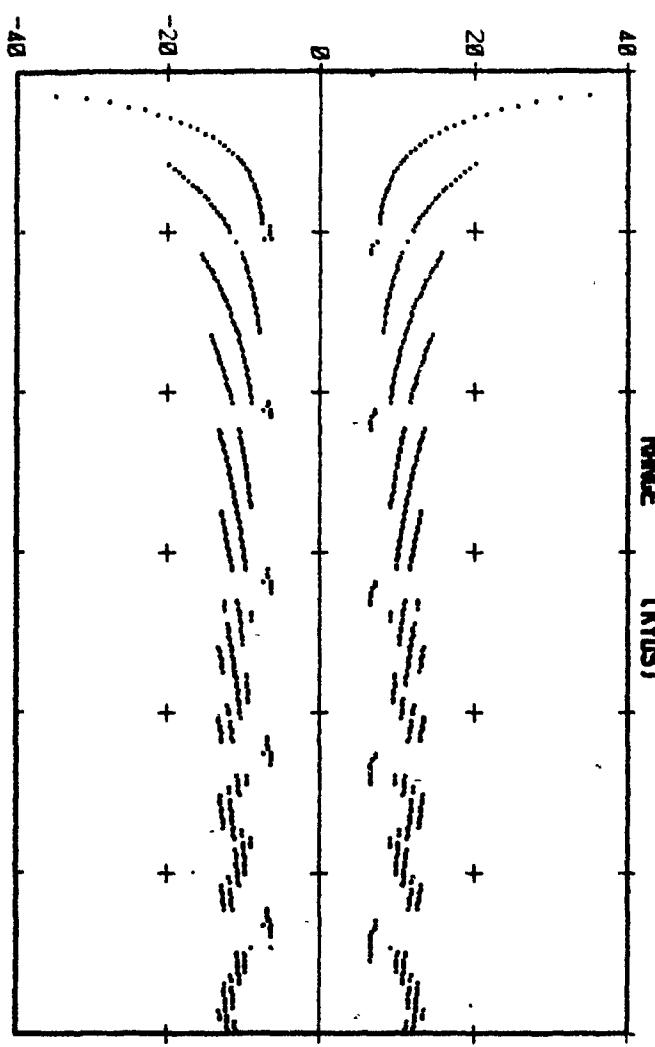
1450 M/S 1500 1550

LRAPP

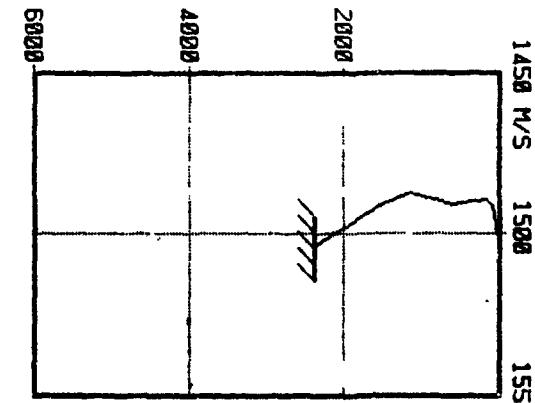
DB LOSS



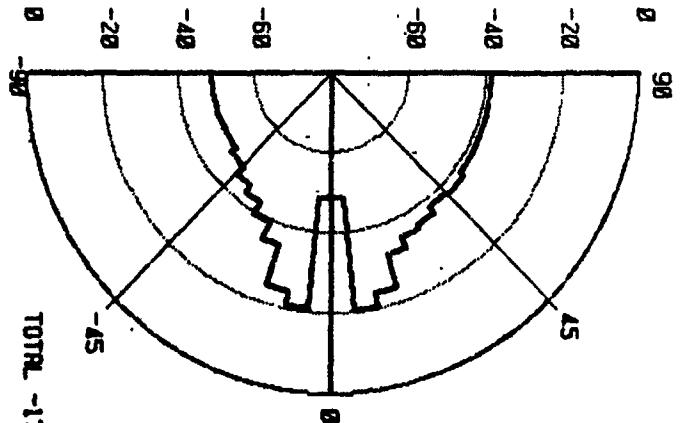
ARRIVAL ANGLE



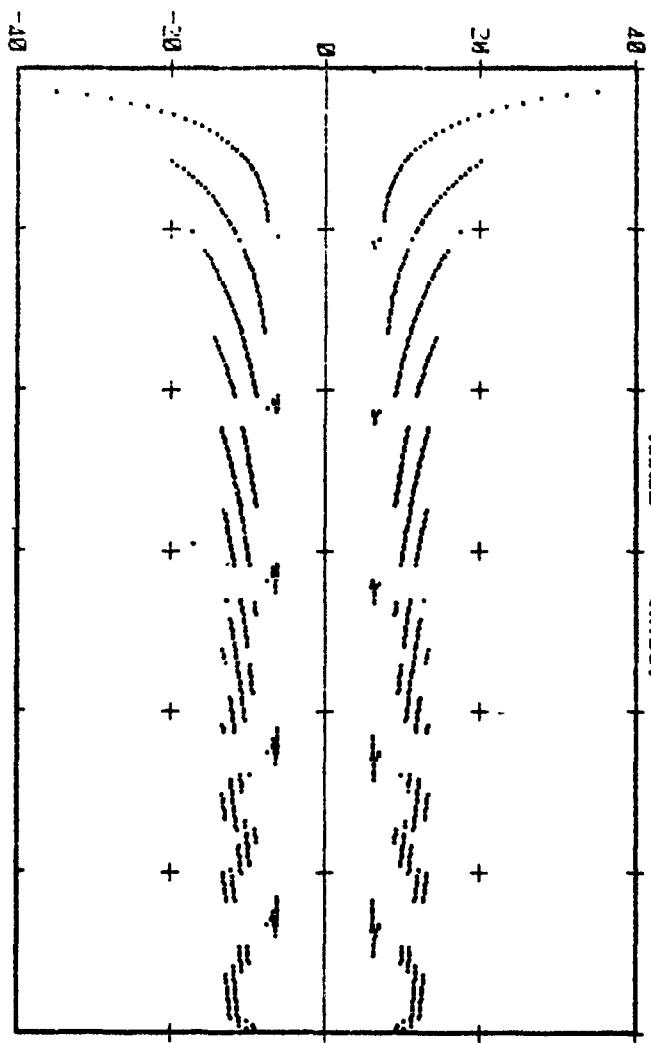
DEPTH IN METERS



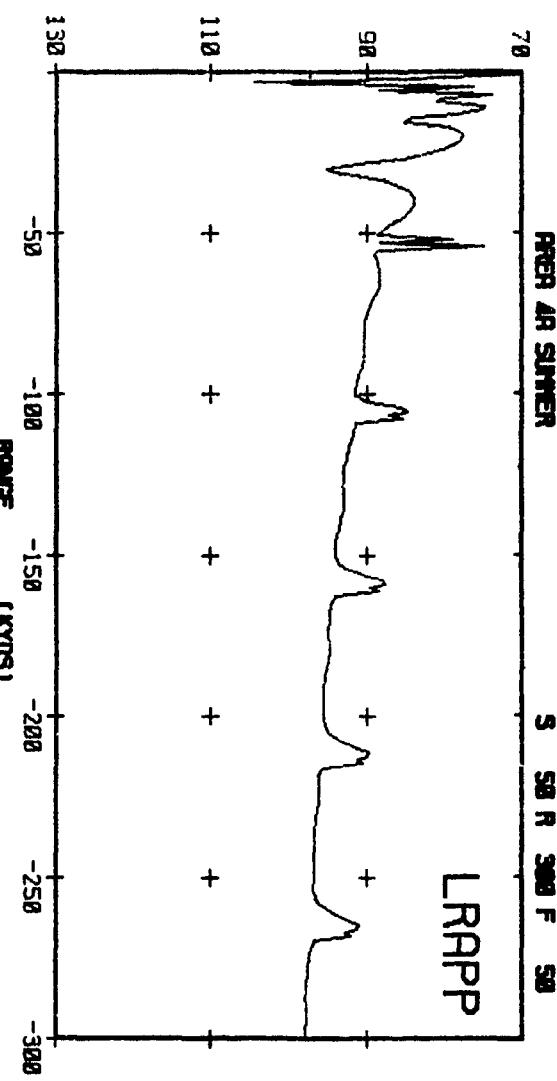
NOISE (DB)



ARRIVAL ANGLE



DB LOSS



LRAAPP

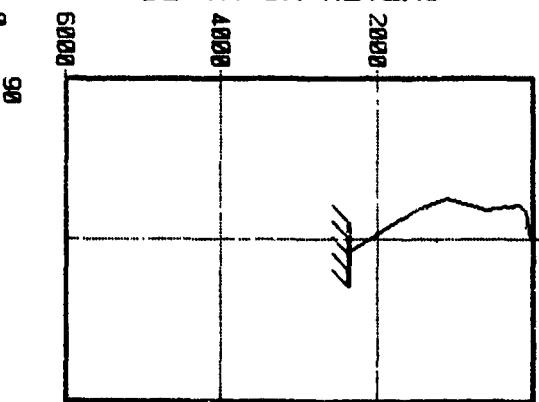
70

ARR ARR SUMMER

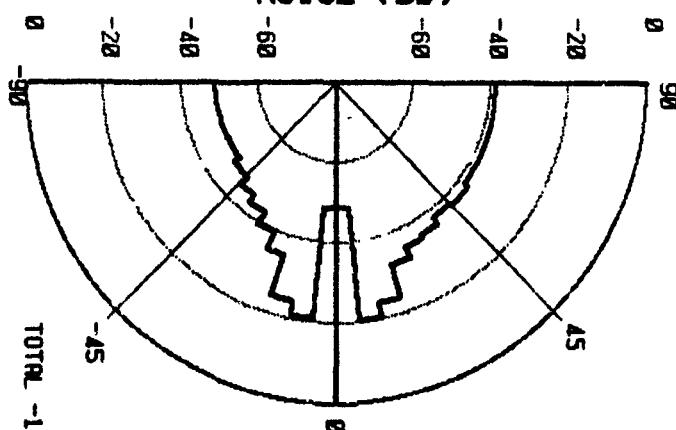
S S8 R 300 F 50

1450 M/S 1500 1550

DEPTH IN METERS



NOISE (DB)



TOTAL -17.8 DB

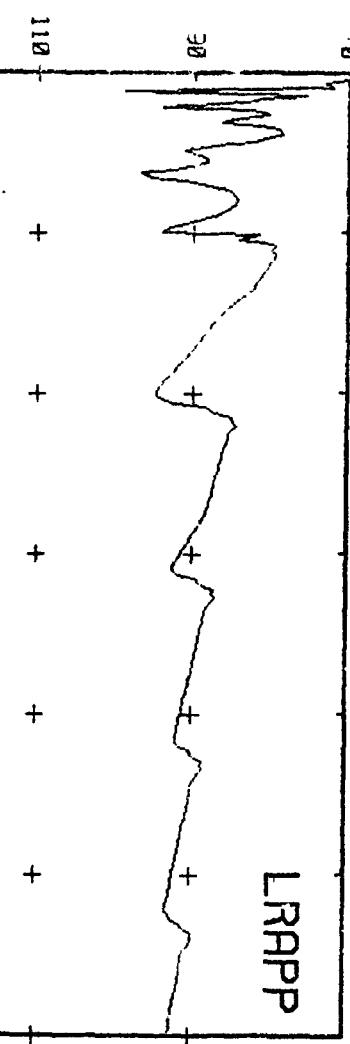
70

AREA 4R SUMMER

S 293 R 300 F SW

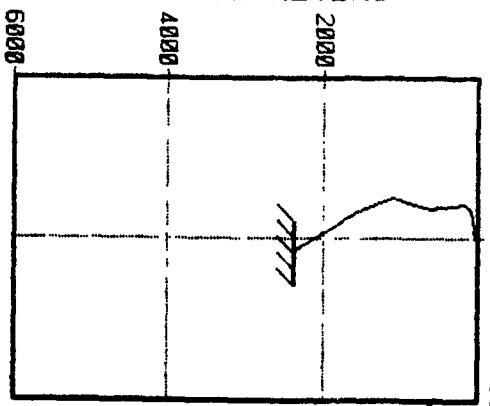
1450 M/S 1500 1550

DB LOSS

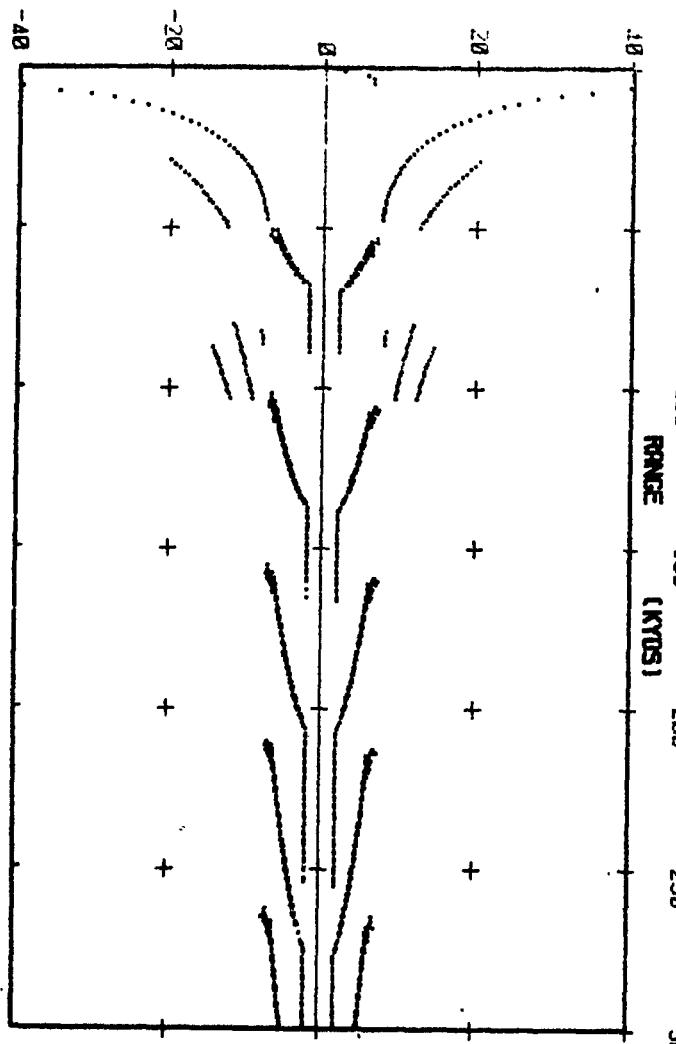


LRAAPP

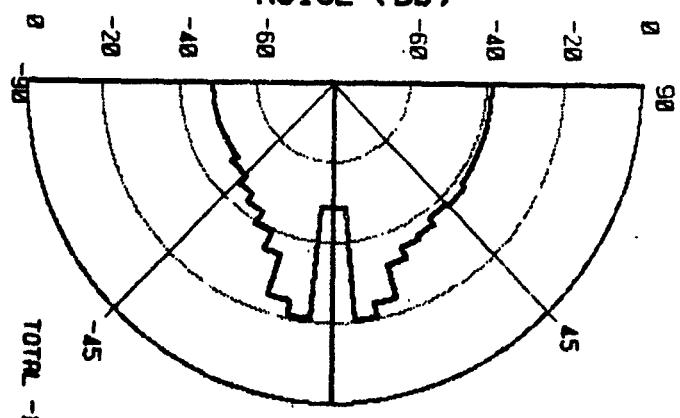
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)



TOTAL -17.8 dB

70

AREA 4R SUMMER

S 28 R 1000 F 50

1450 M/S

1500

1550

DB LOSS

90

+

+

+

+

+

+

110

+

+

+

+

+

+

DEPTH IN METERS

2000

4000

6000

40

0

-20

-40

-60

-80

-100

-120

-140

-160

-180

-200

-220

-240

-260

-280

-300

0

90

45

0

30

60

90

120

150

180

210

240

270

300

330

360

390

420

450

480

510

540

570

600

630

660

690

720

750

780

810

840

870

900

930

960

990

1020

1050

1080

1110

1140

1170

1200

1230

1260

1290

1320

1350

1380

1410

1440

1470

1500

1530

ARRIVAL ANGLE

-20

0

20

-100

-80

-60

-40

-20

0

20

40

60

80

100

120

140

160

180

200

220

240

260

280

300

320

340

360

380

400

420

440

460

480

500

520

540

560

580

600

620

640

660

680

700

720

740

760

780

800

820

840

860

880

900

920

940

960

980

1000

1020

1040

1060

1080

1100

1120

1140

1160

1180

1200

1220

1240

1260

1280

1300

1320

1340

1360

1380

1400

1420

1440

1460

1480

1500

1520

1540

1560

1580

1600

1620

1640

1660

1680

1700

1720

1740

1760

1780

1800

1820

1840

1860

1880

1900

1920

1940

1960

1980

2000

2020

2040

2060

2080

2100

2120

2140

2160

2180

2200

2220

2240

2260

2280

2300

2320

2340

2360

2380

2400

2420

2440

2460

2480

2500

2520

2540

2560

2580

2600

2620

2640

2660

2680

2700

2720

2740

2760

2780

2800

2820

2840

2860

2880

2900

2920

2940

2960

2980

3000

3020

3040

3060

3080

3100

3120

3140

3160

3180

3200

3220

3240

3260

3280

3300

3320

3340

3360

3380

3400

3420

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3480

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3900

3920

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3960

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4000

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4080

4100

4120

4140

4160

4180

4200

4220

4240

4260

4280

4300

4320

4340

4360

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4700

4720

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4800

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4960

4980

5000

5020

5040

5060

5080

5100

5120

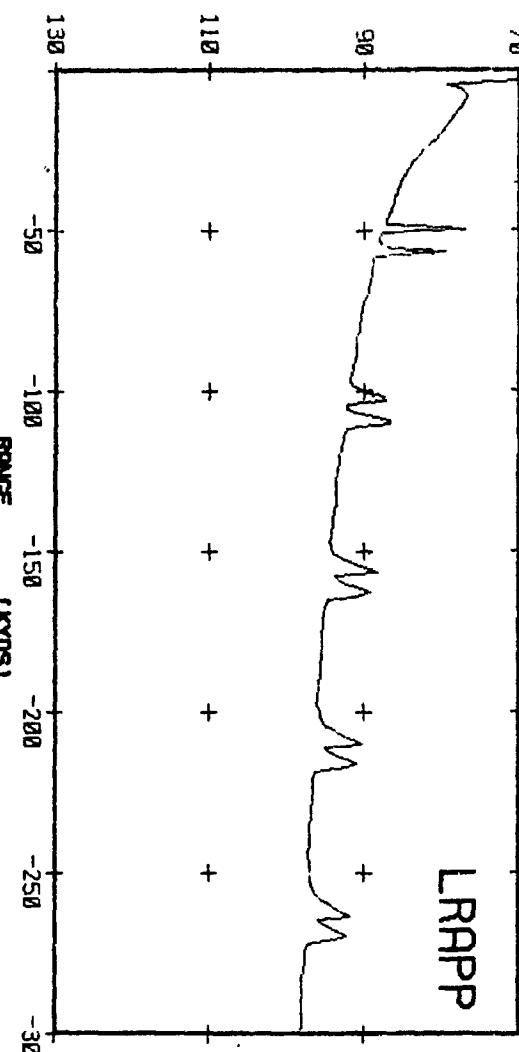
70

FRIER 4R SUMMER

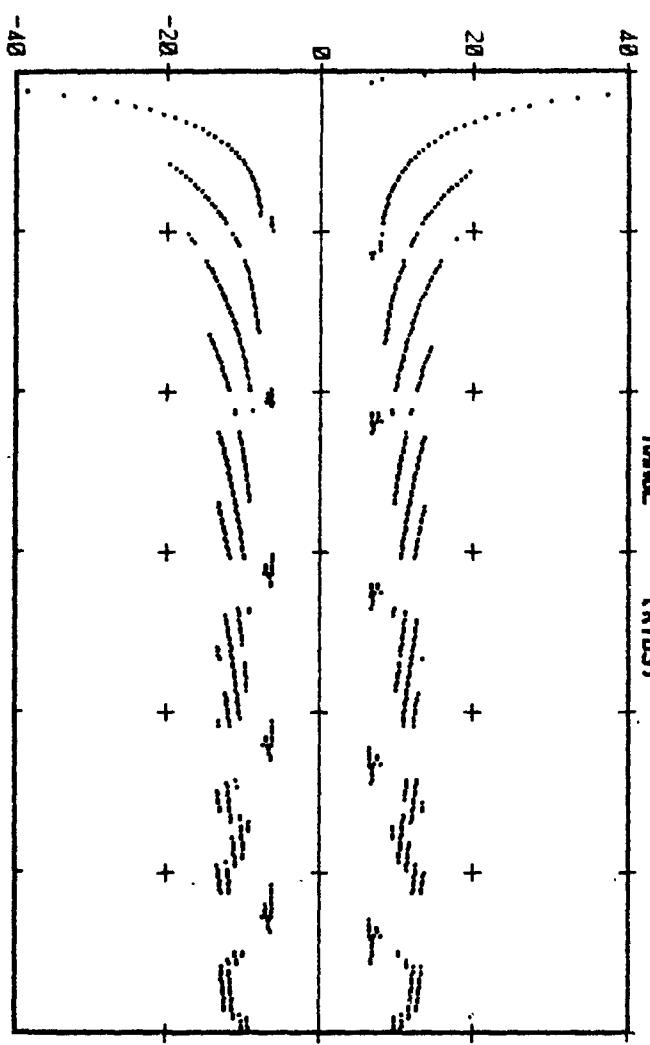
S 50 R 1000 F 50

1450 M/S 1500 1550

DB LOSS

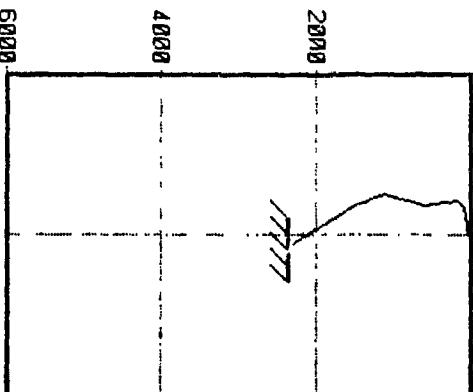


ARRIVAL ANGLE

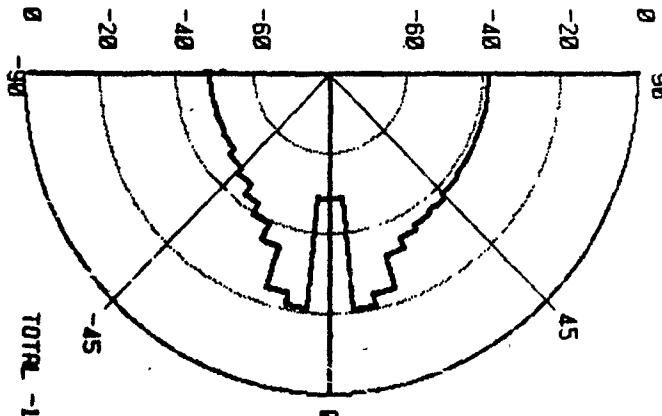


LRAPP

DEPTH IN METERS



NOISE (DB)



TOTAL -17.9 DB

1

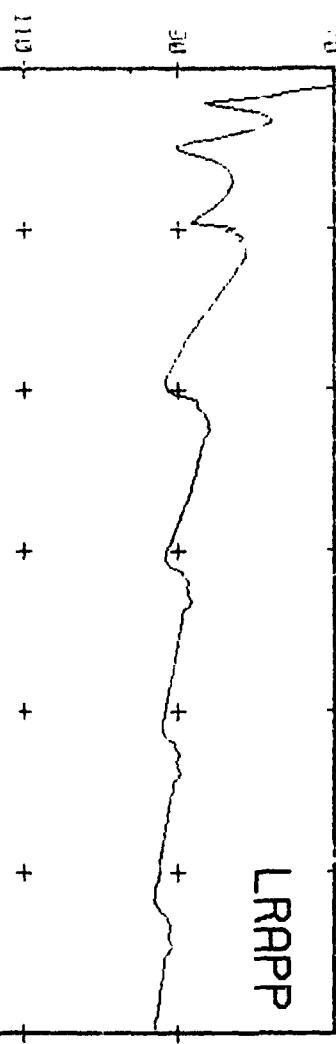
AREA 4A SUMMER

S 233 R 1000 F 50

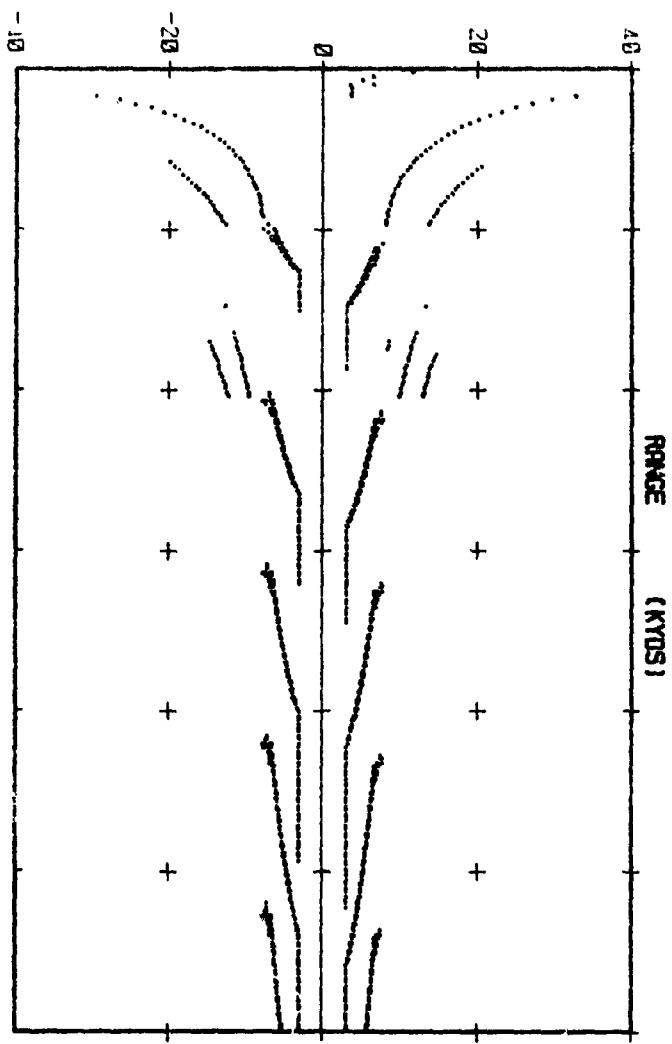
1450 M/S 1500 1550

DB LOSS

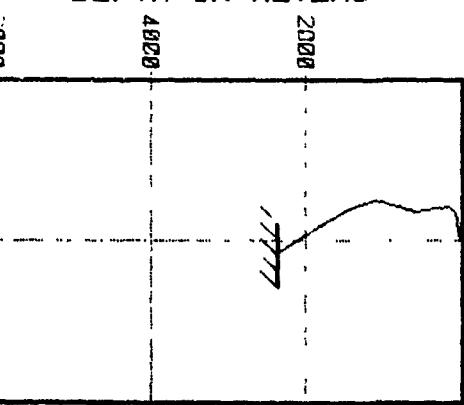
LRAPP



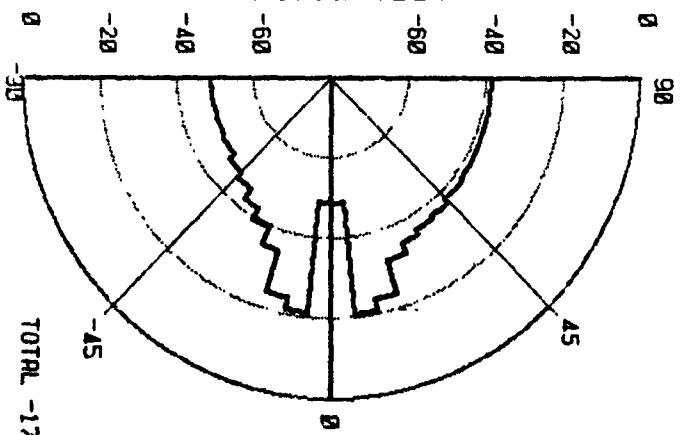
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



TOTAL -17.9 DB

70

ARRER 4A SUMMER

S 20 R 1500 F 59

1450 M/S 1500 1550

LRAPP

DB LOSS

110

+

+

+

+

+

+

+

+



DEPTH IN METERS

2000

4000

6000

8000

10000

12000

14000

16000

18000

20000

22000

24000

26000

28000

30000

32000

34000

36000

38000

40000

42000

44000

46000

48000

50000

52000

54000

56000

58000

60000

62000

64000

66000

68000

70000

72000

74000

76000

78000

80000

82000

84000

86000

88000

90000

92000

94000

96000

98000

100000

102000

104000

106000

108000

110000

112000

114000

116000

118000

120000

122000

124000

126000

128000

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136000

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144000

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584000

586000

588000

590000

592000

594000

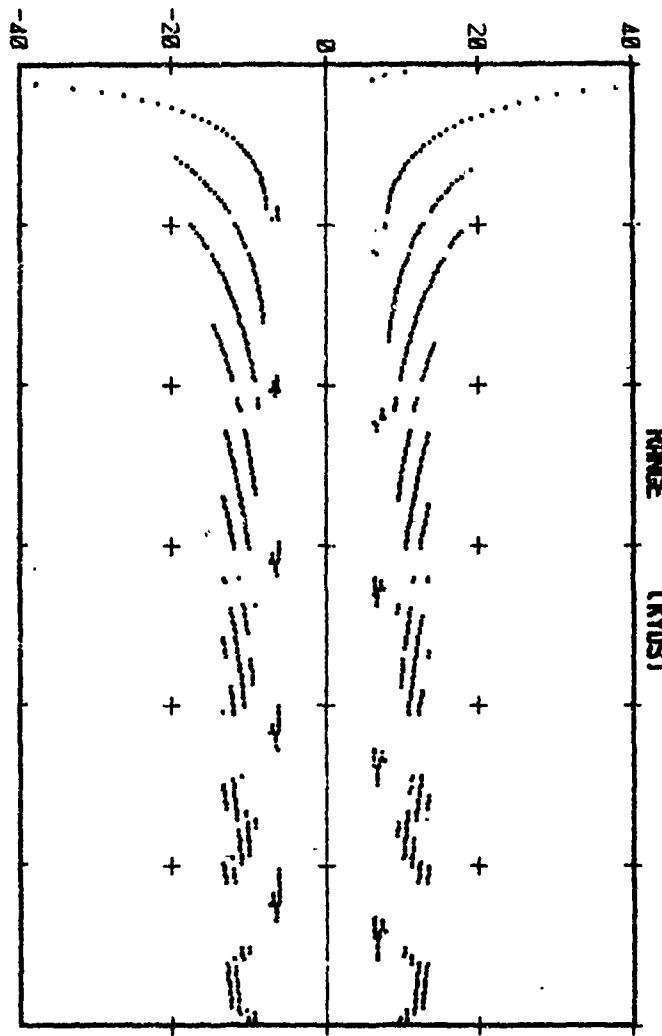
596000

598000

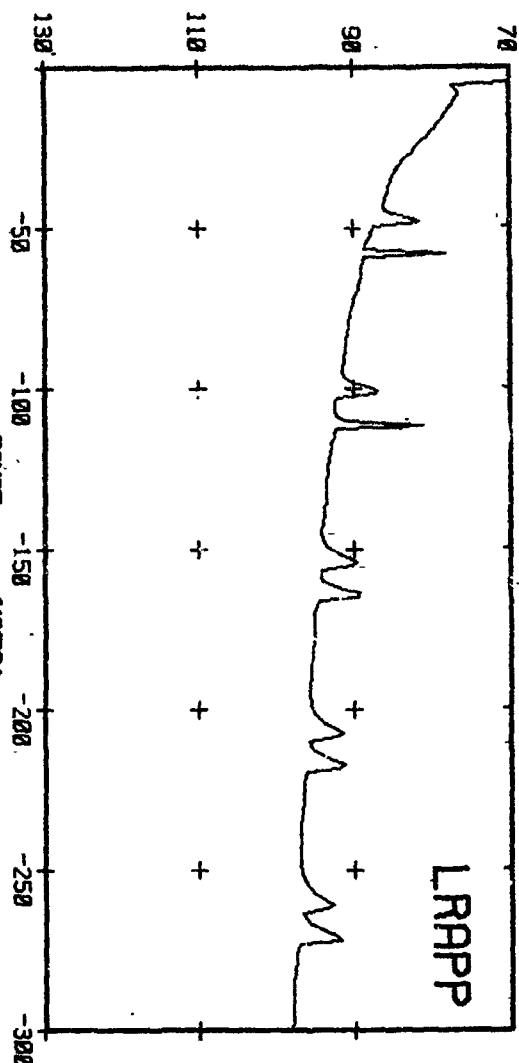
600000

602000

ARRIVAL ANGLE



DB LOSS



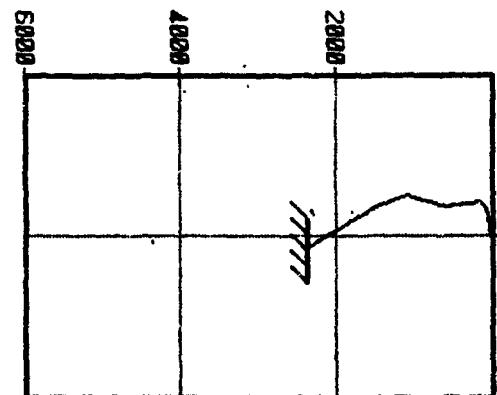
PERIOD SUMMER

S 58 R 150 F 58

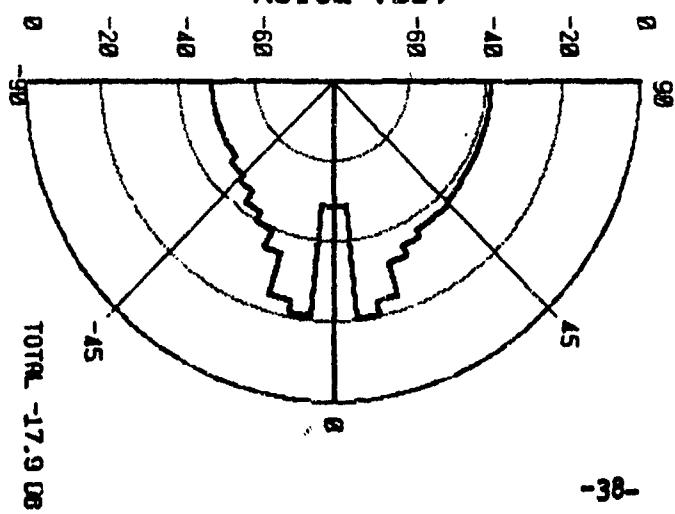
L.RAPP

1450 M/S 1500 1550

DEPTH IN METERS



NOISE (DB)

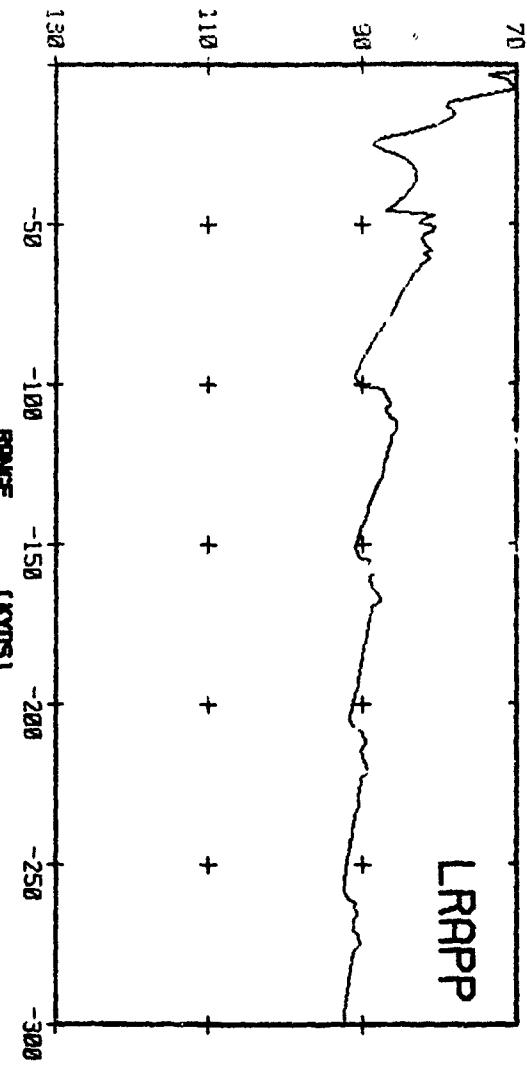


44R 4A SUMMER

S 233 R 1500 F 38

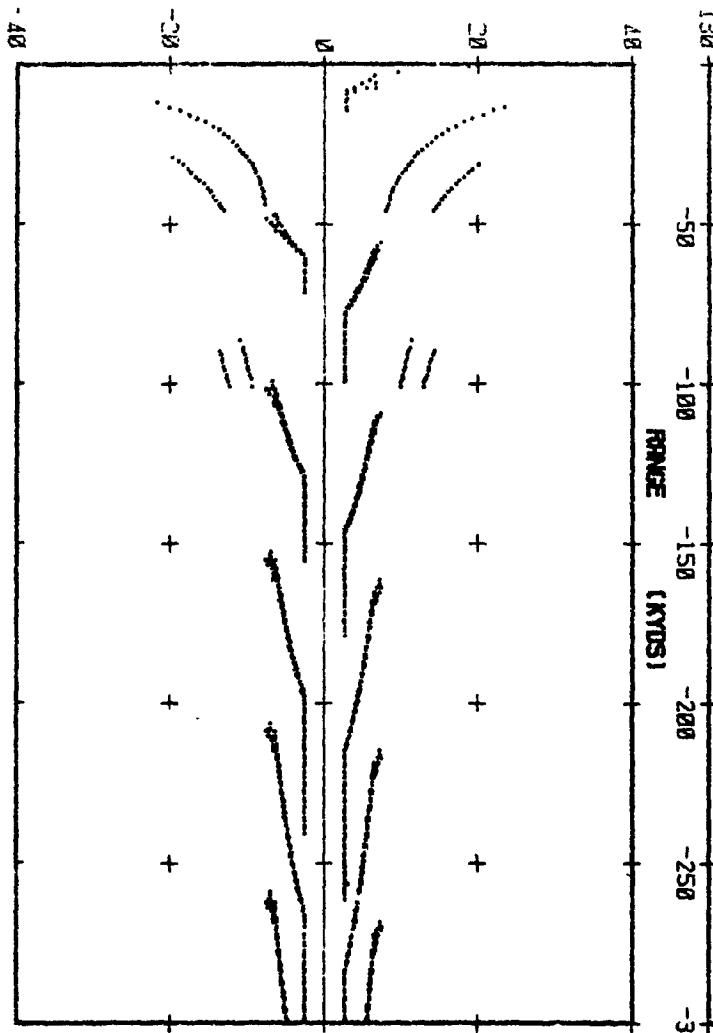
1458 M/S 1500 1558

DB LOSS

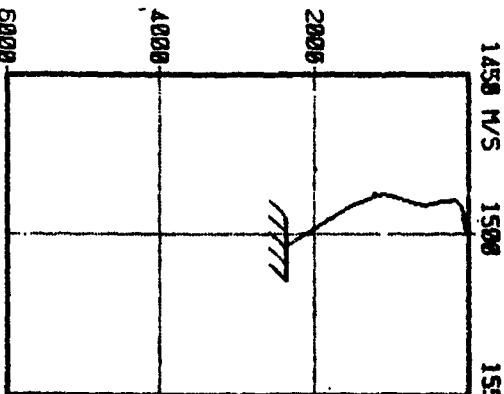


L RAPP

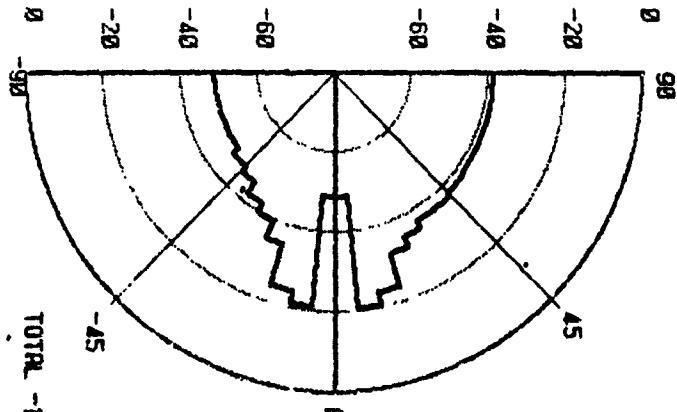
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



TOTAL -17.9 DB

7d

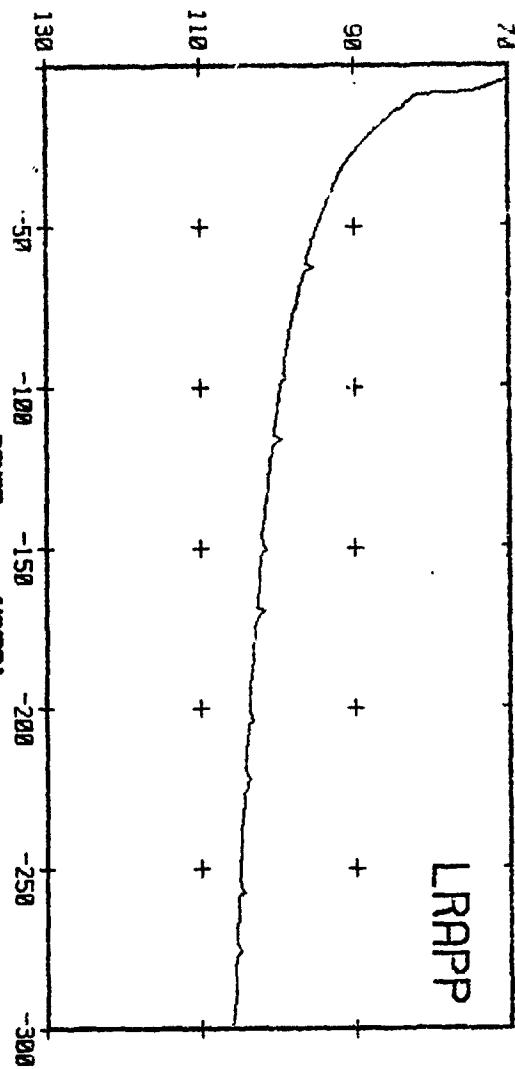
RIVER 4A SUMMER

S 29 R 37W F 58

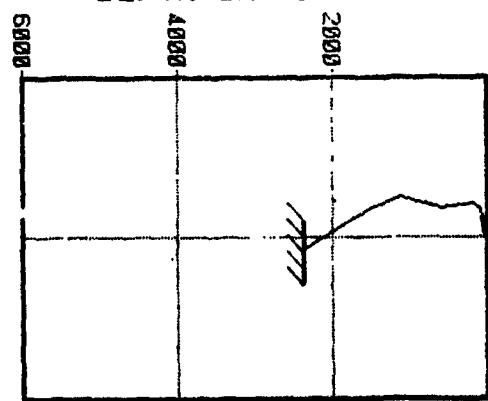
1450 M/S 1500 1550

LRAAPP

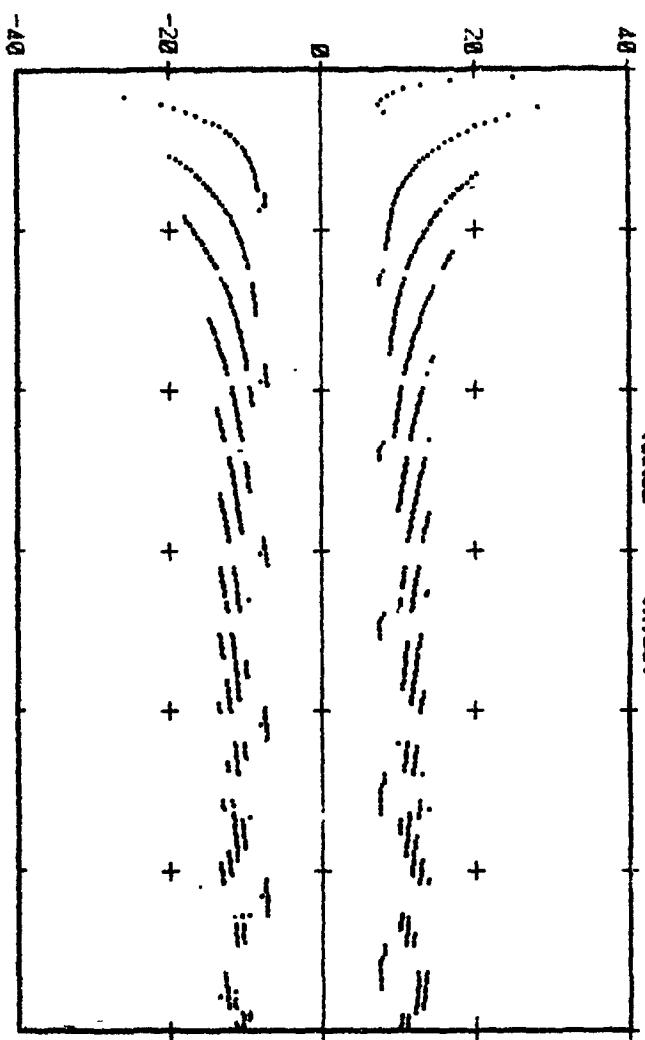
DB LOSS



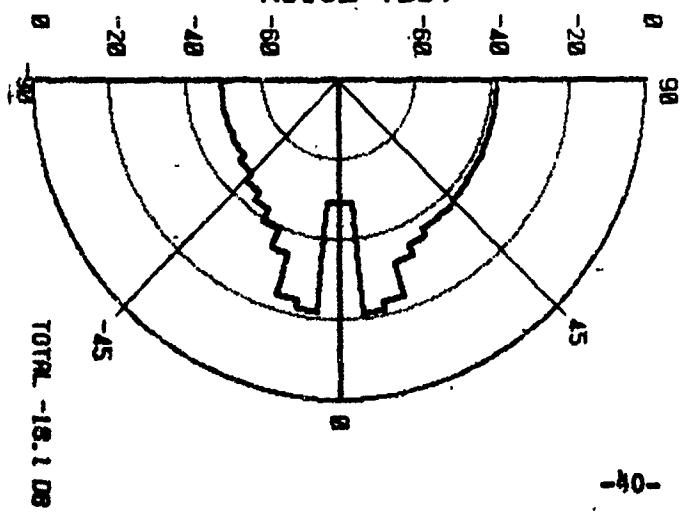
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)



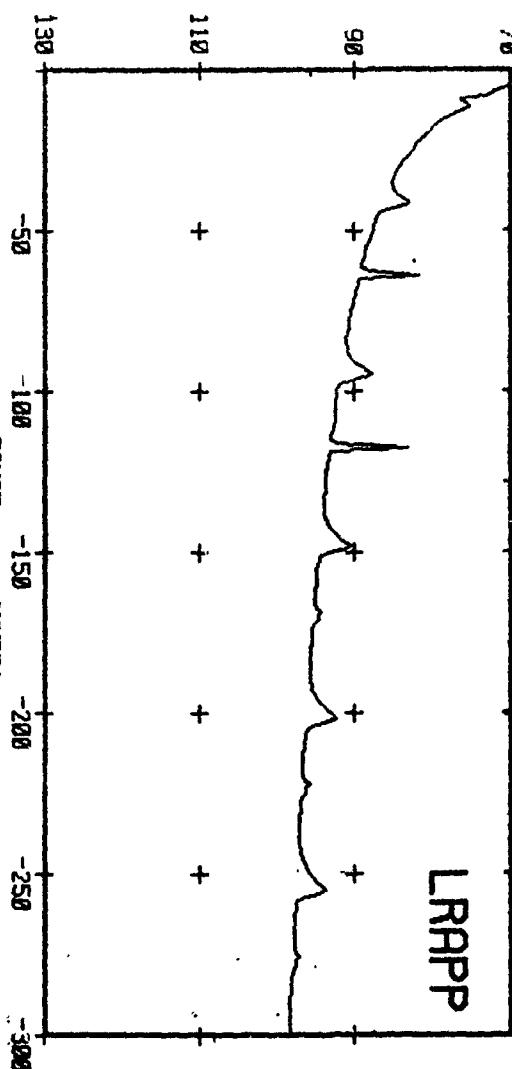
70

RIVER AIR SUMMER

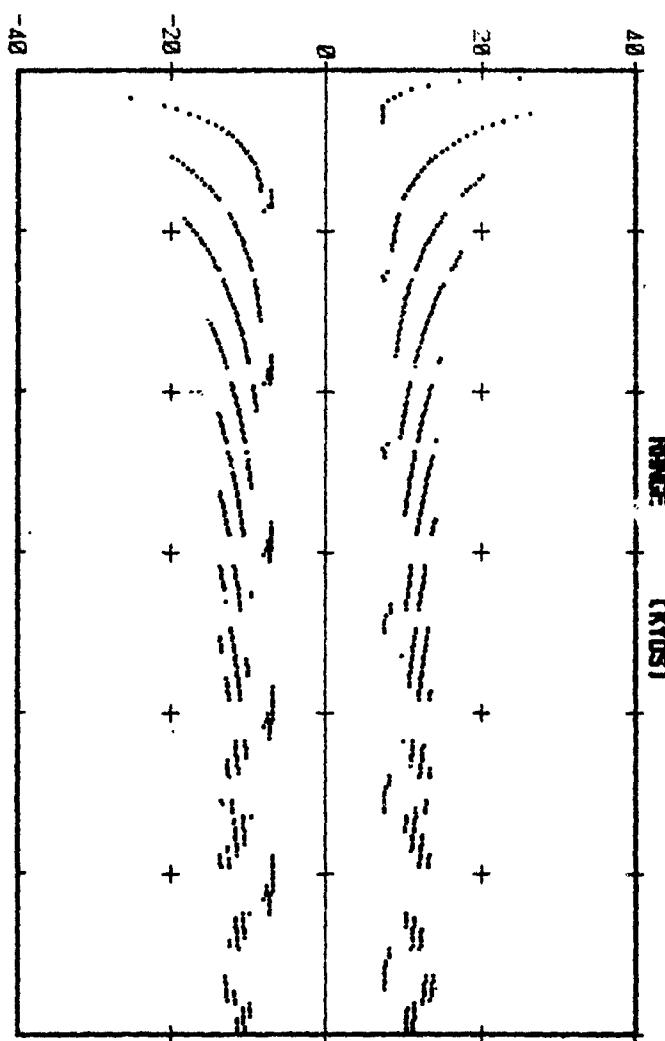
S S R R T F S

1450 Hz 1500 1550

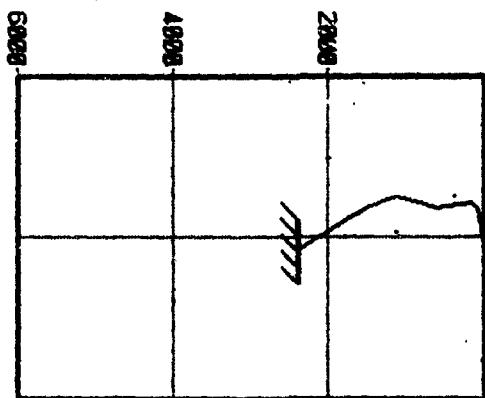
DB LOSS



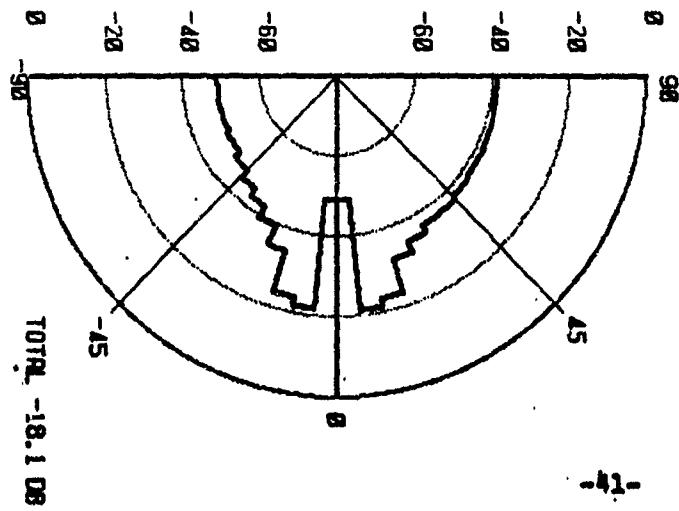
ARRIVAL ANGLE



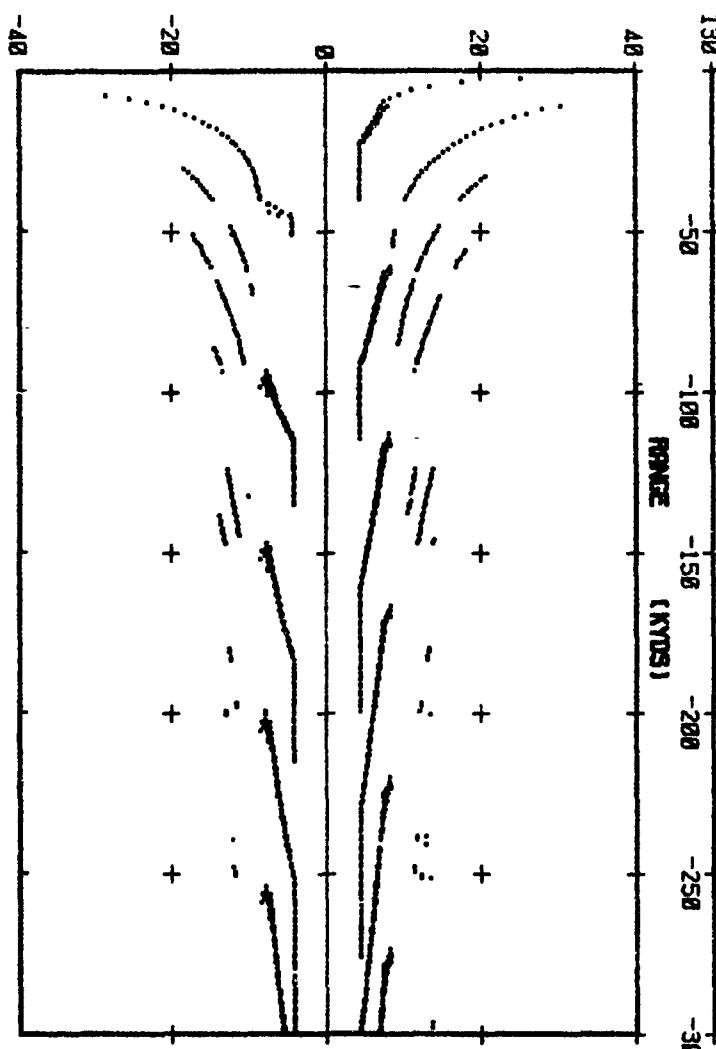
DEPTH IN METERS



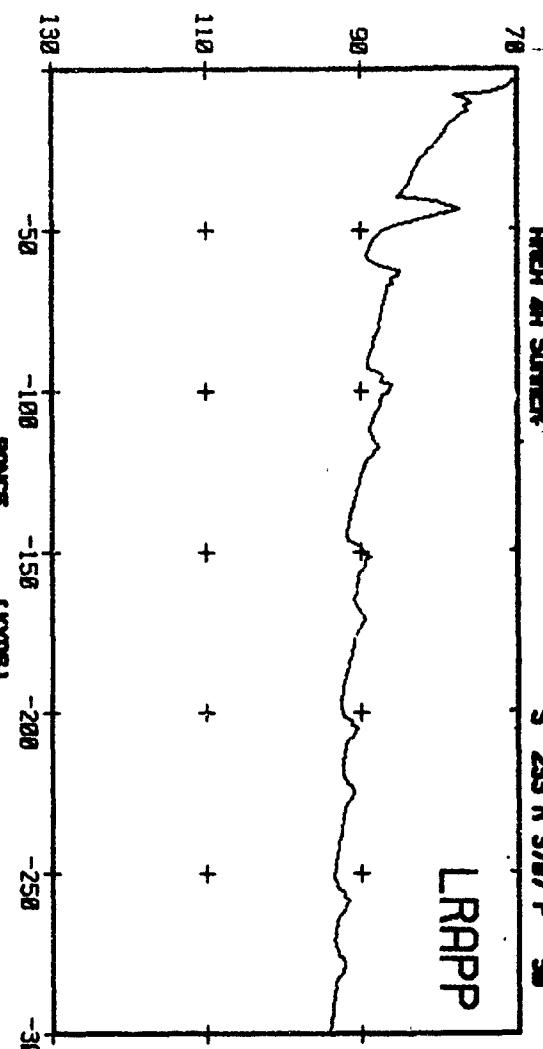
NOISE (DB)



ARRIVAL ANGLE



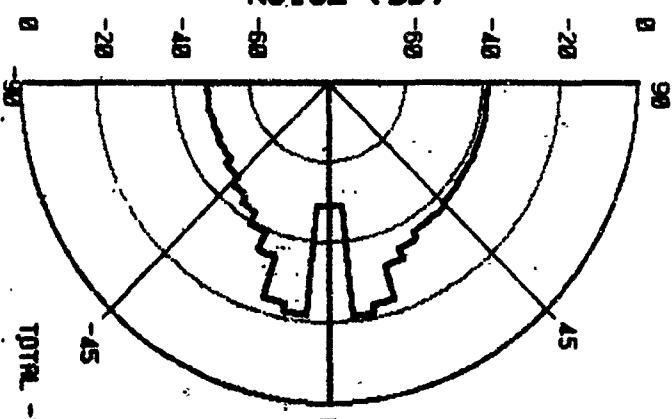
DB LOSS



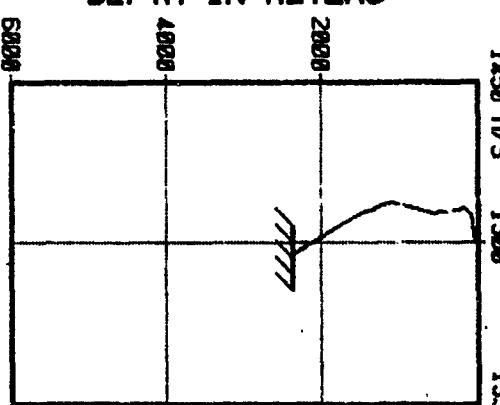
RIVER AIR STREAM
S 233 R 5717 F 59

LRAPP

NOISE (DB)



DEPTH IN METERS



1450 M/S 1520 1550

TOTAL -16.1 dB

78

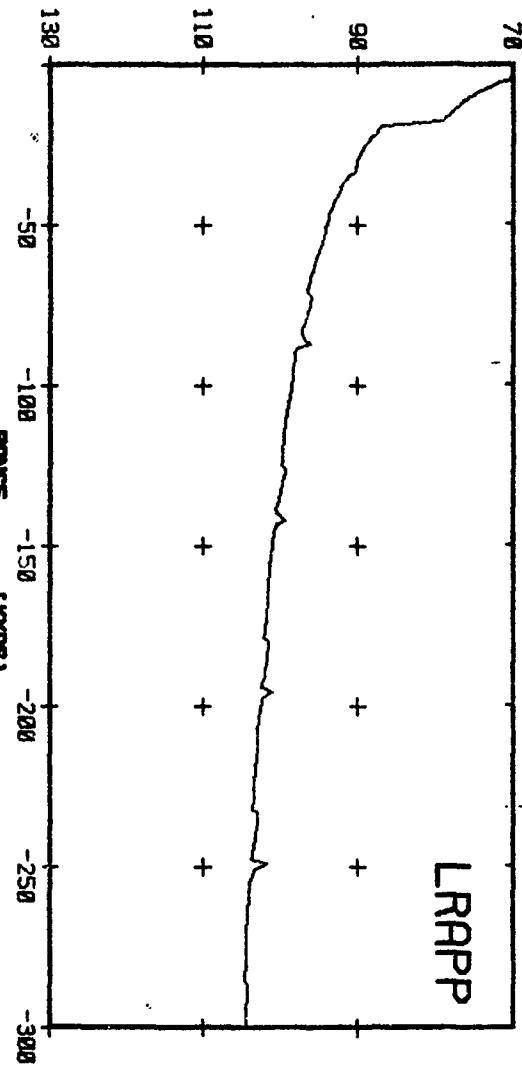
AUG 4R SUMMER

S 28 R 6658 F 58

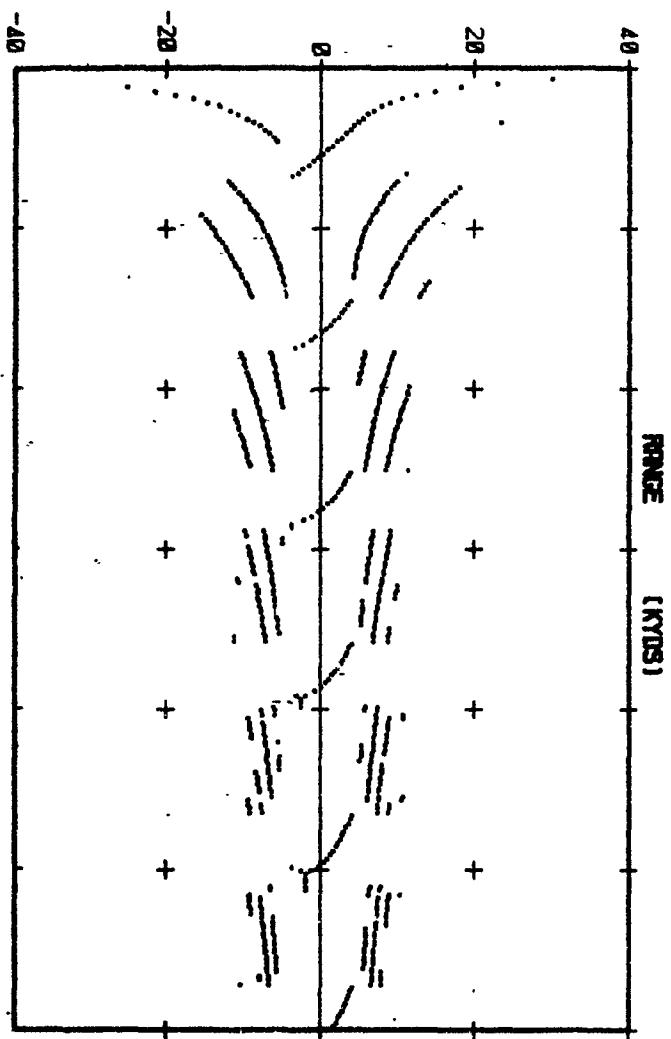
1450 M/S 1500

1550

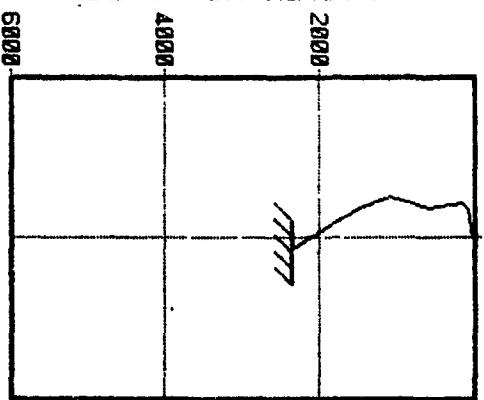
DB LOSS



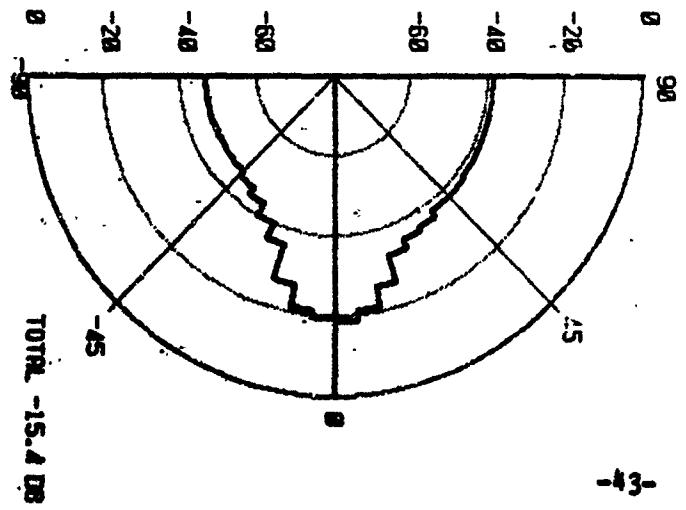
ARRIVAL ANGLE



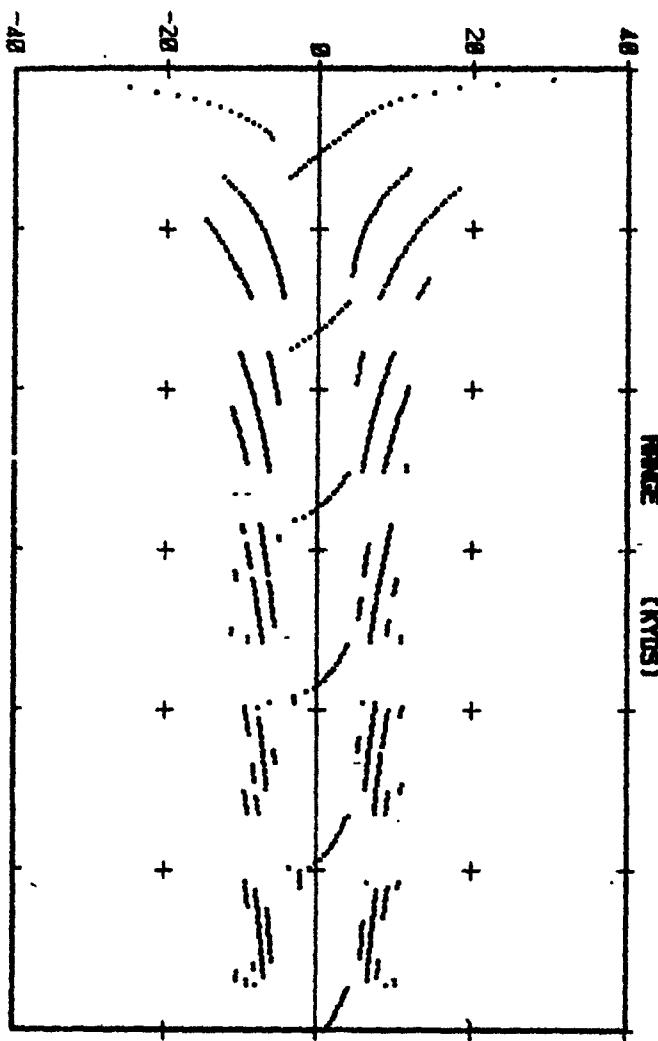
DEPTH IN METERS



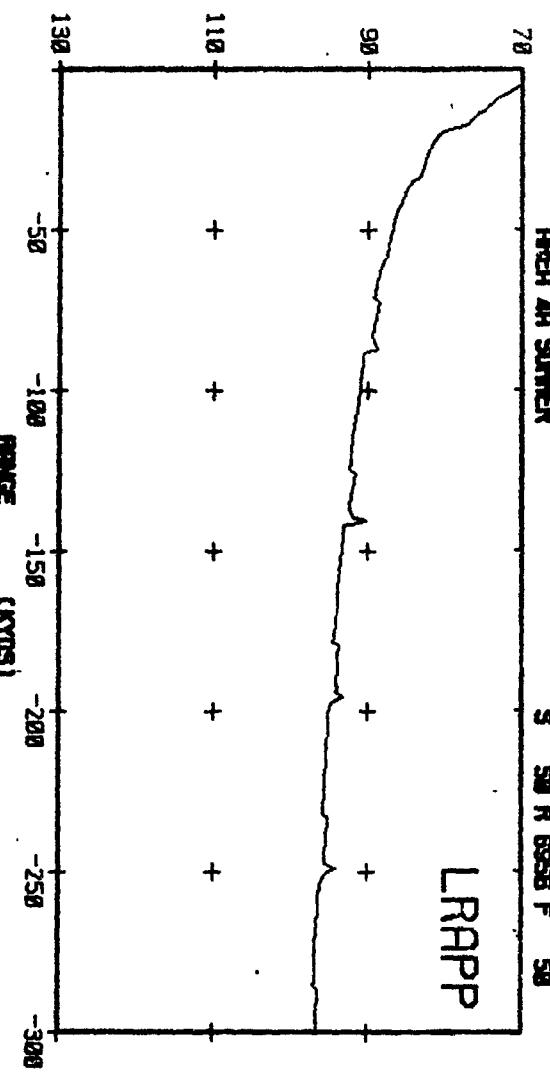
NOISE (DB)



ARRIVAL ANGLE



DB LOSS

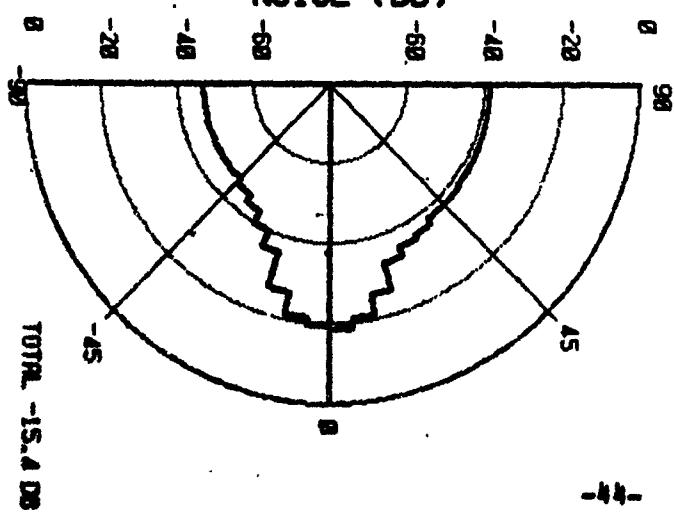


AREA A8 SUMMER

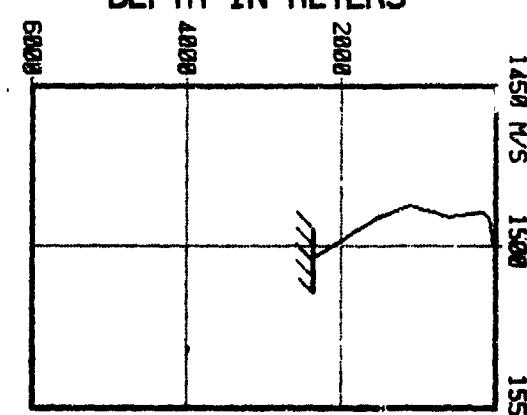
S SBR 6958 F 59

LRAPP

NOISE (DB)



DEPTH IN METERS



1450 M/S 1500 1550

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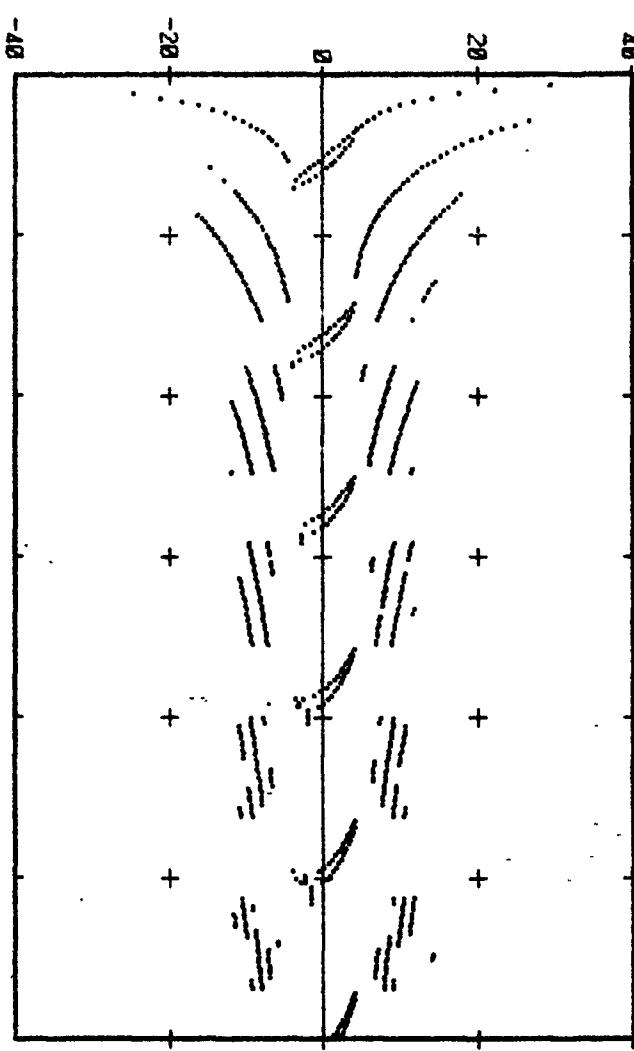
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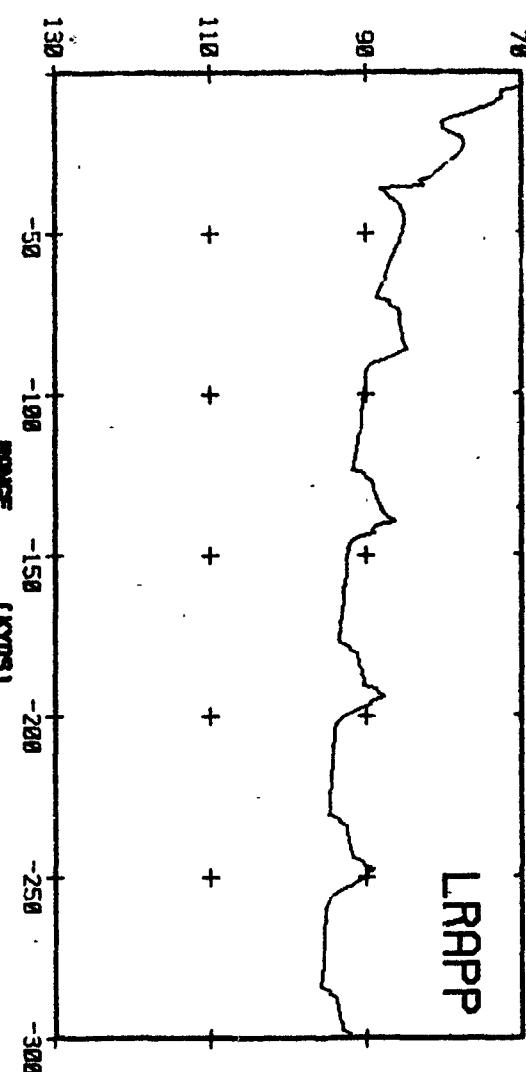
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ARRIVAL ANGLE



DB LOSS



RIVER AR SUMMER

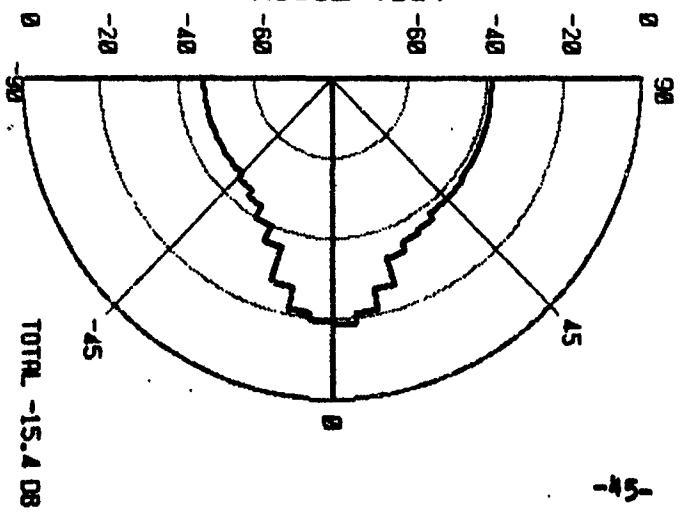
S 253 R 6655 F 59

1450 M/S 1500

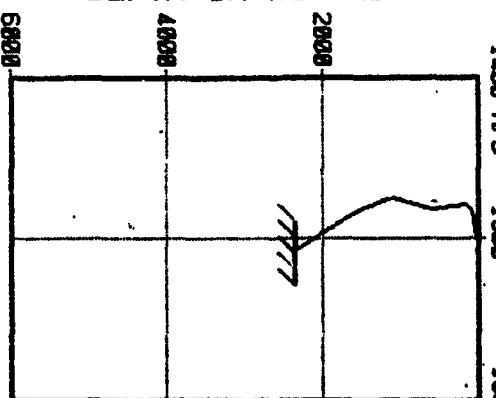
1550

LRAAPP

NOISE (DB)



DEPTH IN METERS

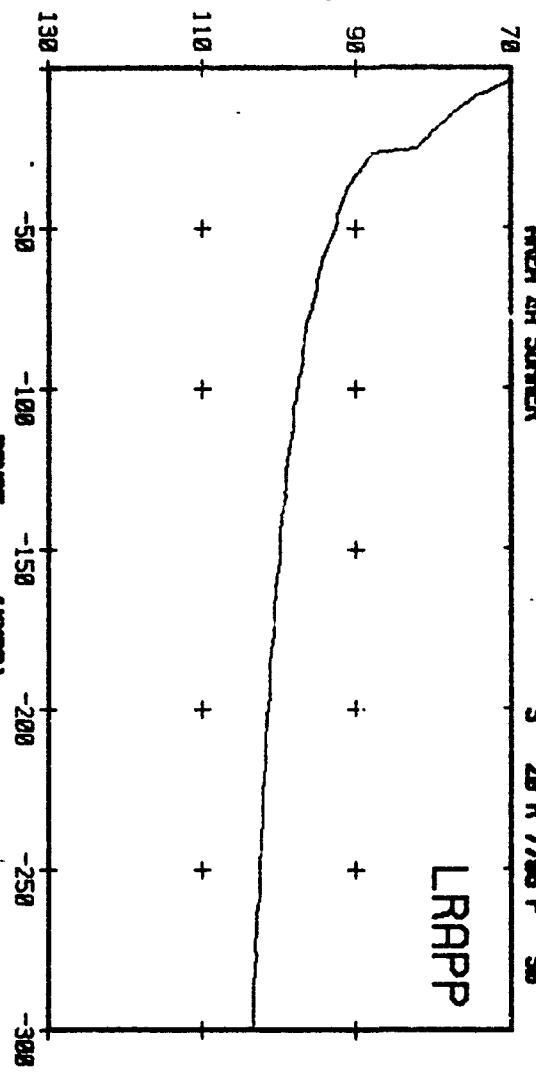


FREE AIR SUMMER

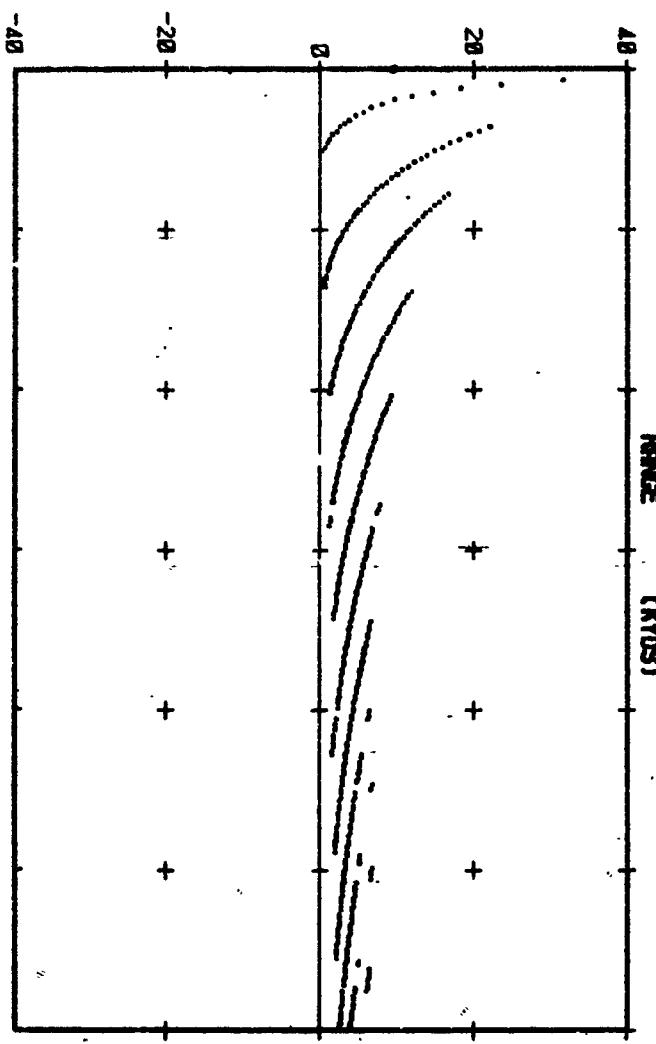
S 28 R 7700 F 58

1450 M/S 1500 1550

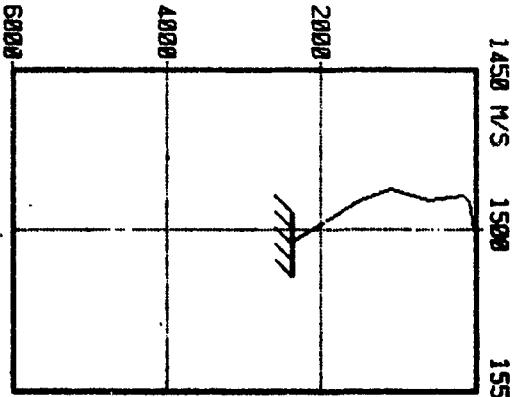
DB LOSS



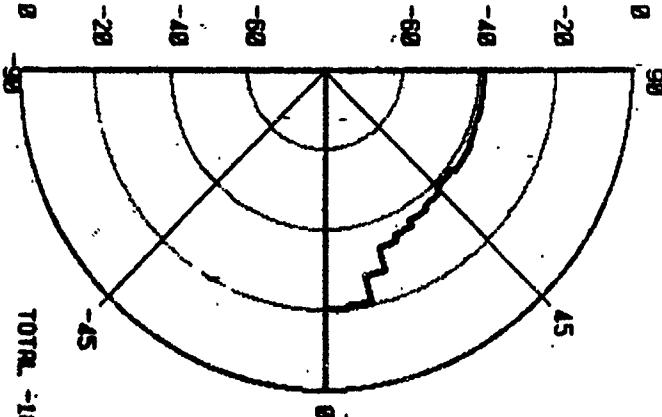
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



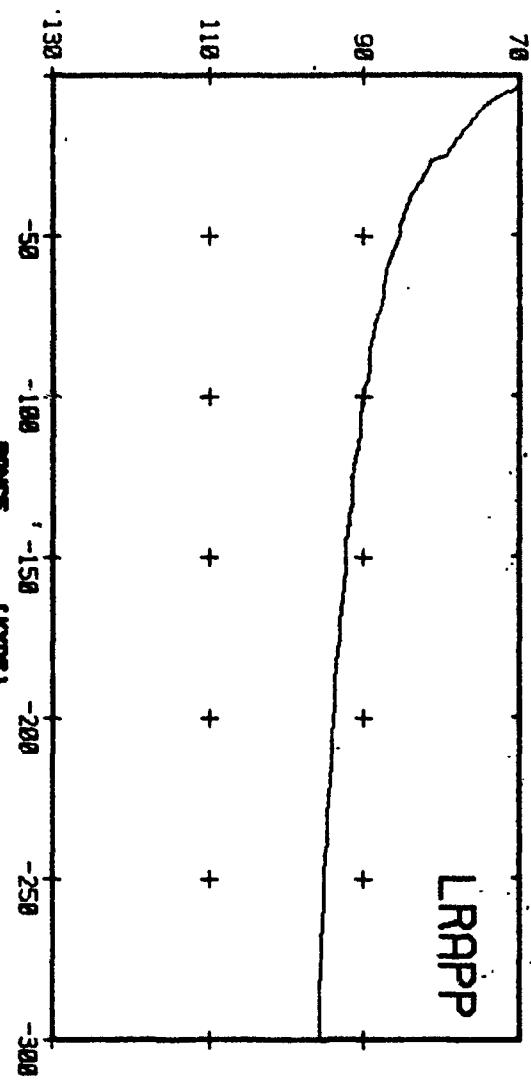
TOTAL -10.9 dB

70
60
50
40
30
20
10
0

S 50 R 770 F 50

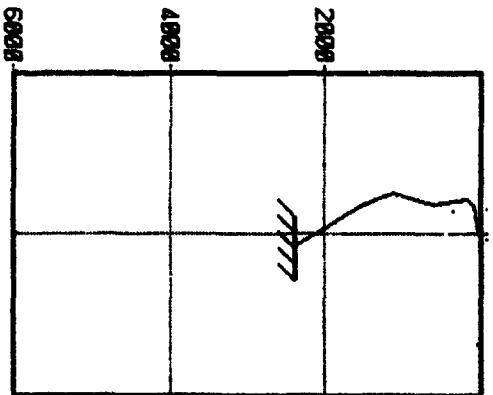
1458 M/S 1500 1550

DB LOSS

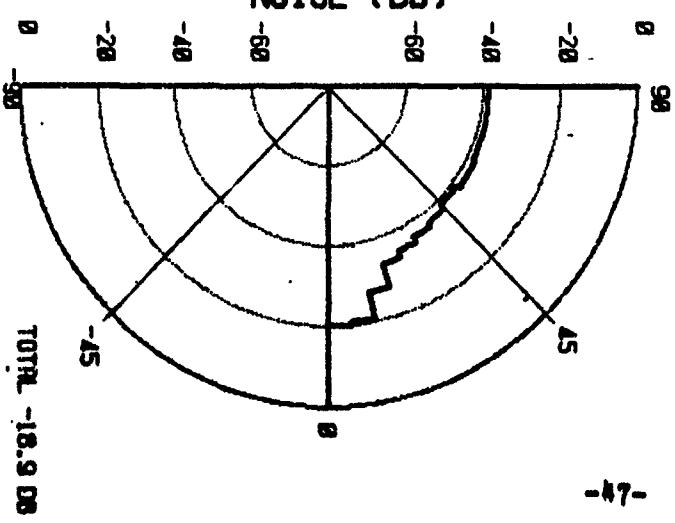


LRAPP

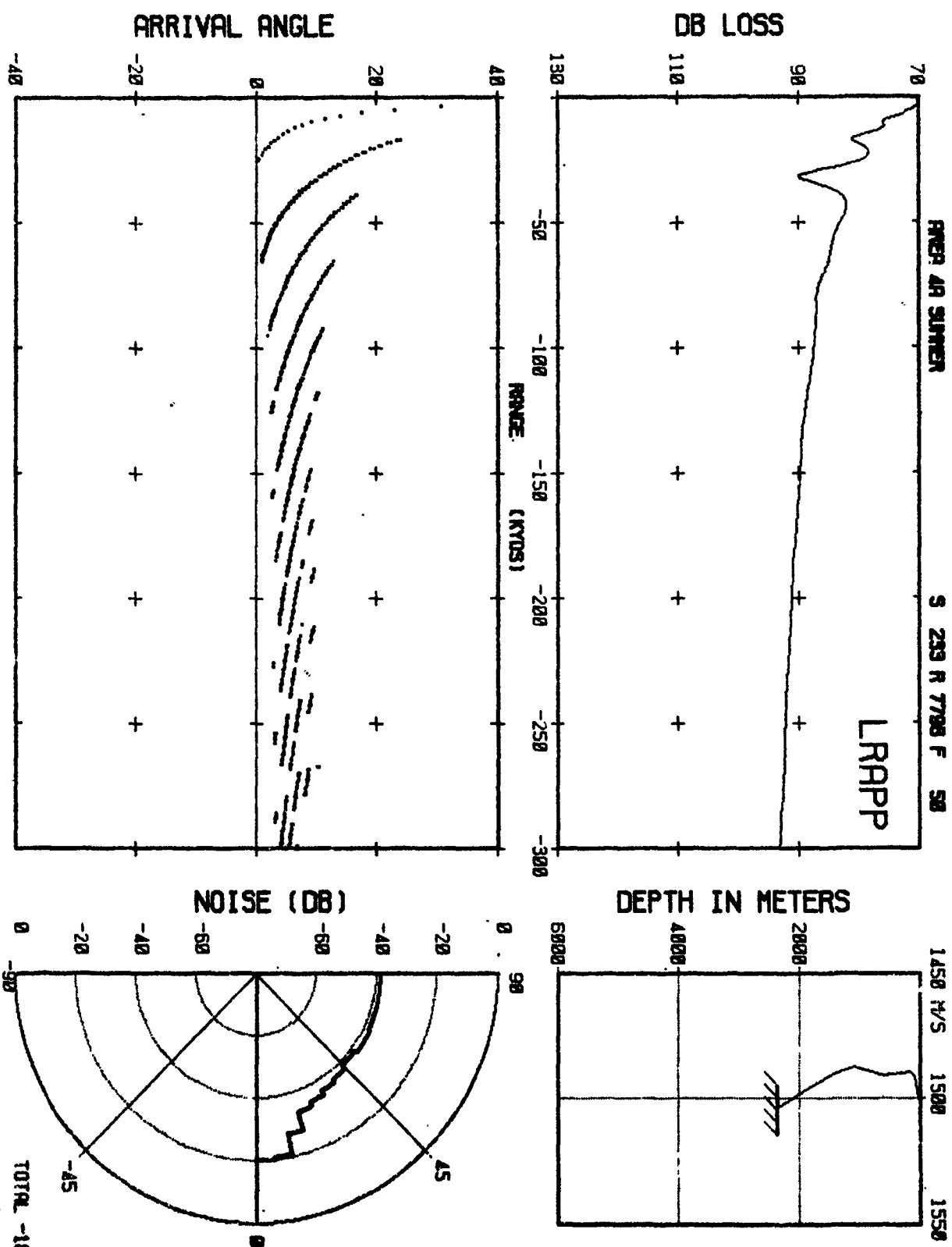
DEPTH IN METERS



NOISE (DB)



ARRIVAL ANGLE



PAGER 4A SUMMER S 20 R 60 F 70

S 20 R 60 F 70

1450 M/S 1500 1550

LRAPP

DB LOSS

110 + + + + + + + + + +

90 + + + + + + + + + +

0

DEPTH IN METERS
2000 1000 0

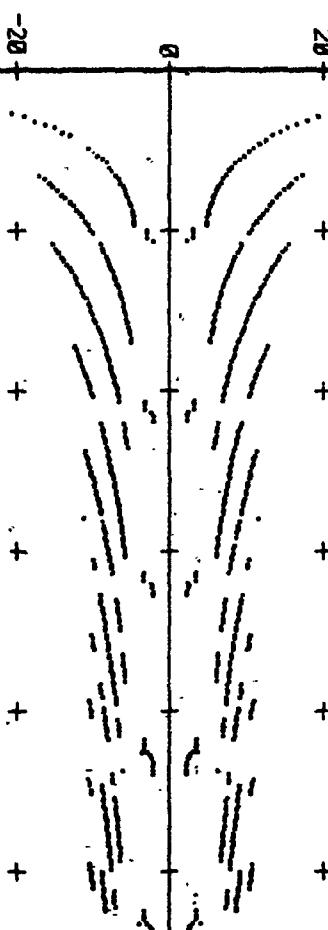
130 110 90 70 50 30 10 0

130 110 90 70 50 30 10 0

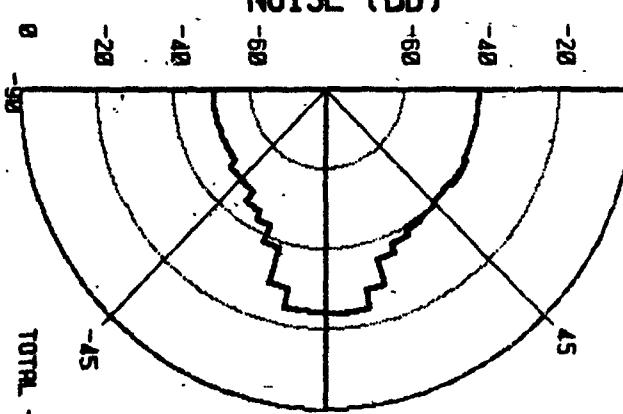
6000 3000 0

-49-

ARRIVAL ANGLE

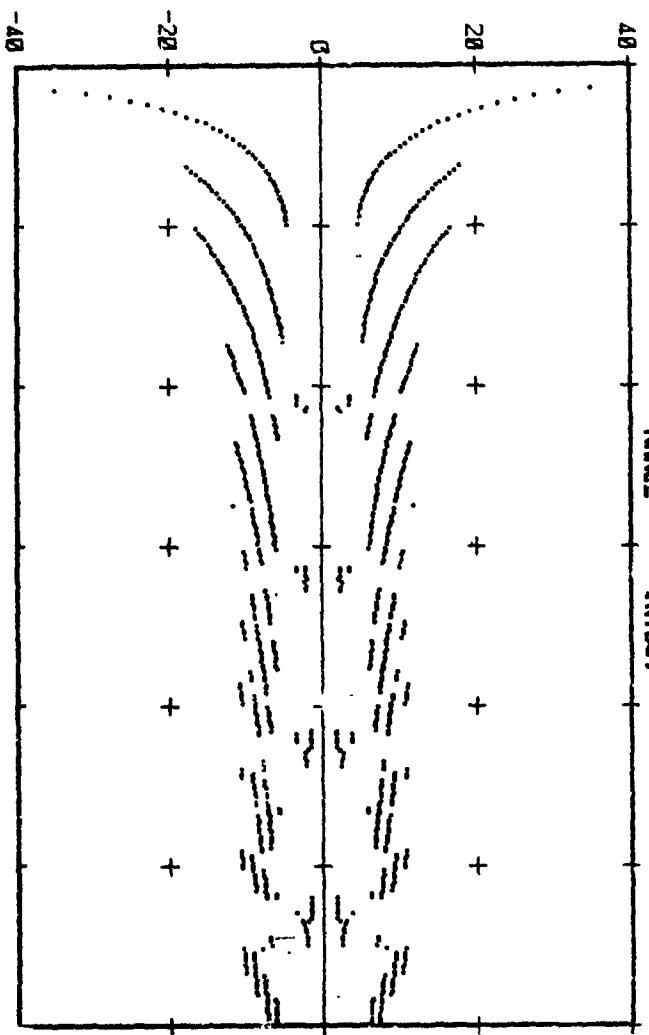


NOISE (DB)

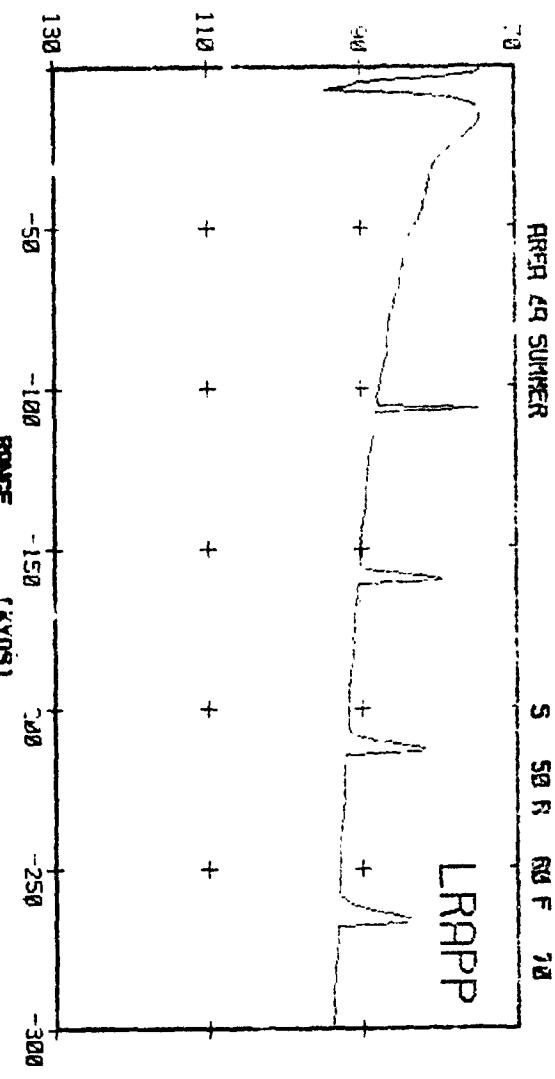


TOTAL -19.2 dB

ARRIVAL ANGLE



DB LOSS



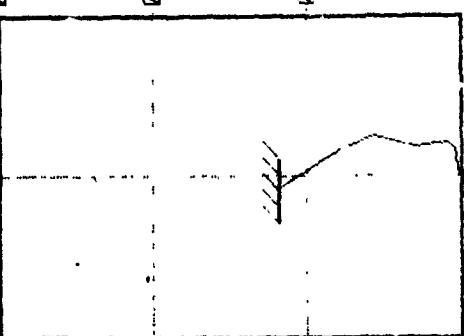
LRAPP

RRR & SUMMER

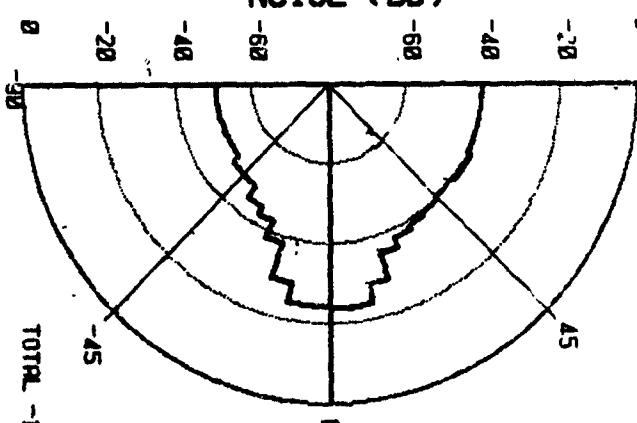
S SR R APP

1450 M/S 1500 1550

DEPTH IN METERS



NOISE (DB)



TOTAL -19.2 DB

70

AFTER AIR SUMMER

S 233 R 68 F 70

1450 M/S 1500 1550

DB LOSS

LRAPP

130
110
90
70

-50 -100 -150 -200 -250 -300

40

0
2000
4000

DEPTH IN METERS

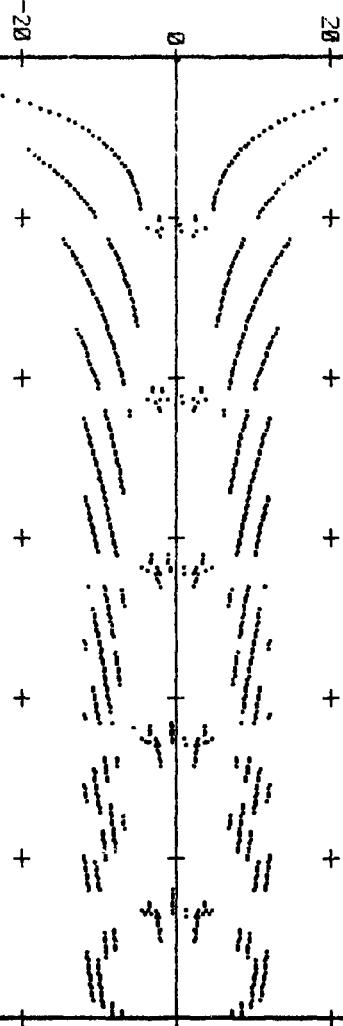
6000

4000

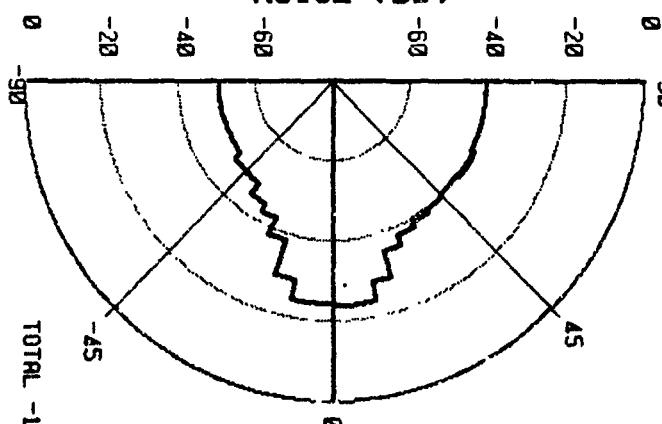
2000

0

ARRIVAL ANGLE



NOISE (DB)



TOTAL -19.2 DB

70

RIVER AR SUMMER

S 20 R 133 F 70

1450 M/S

1500

1550

LRAPP

DB LOSS

110

100

90

80

70

60

50

40

30

20

10

0

130

120

110

100

90

80

70

60

50

40

30

20

10

0

40

30

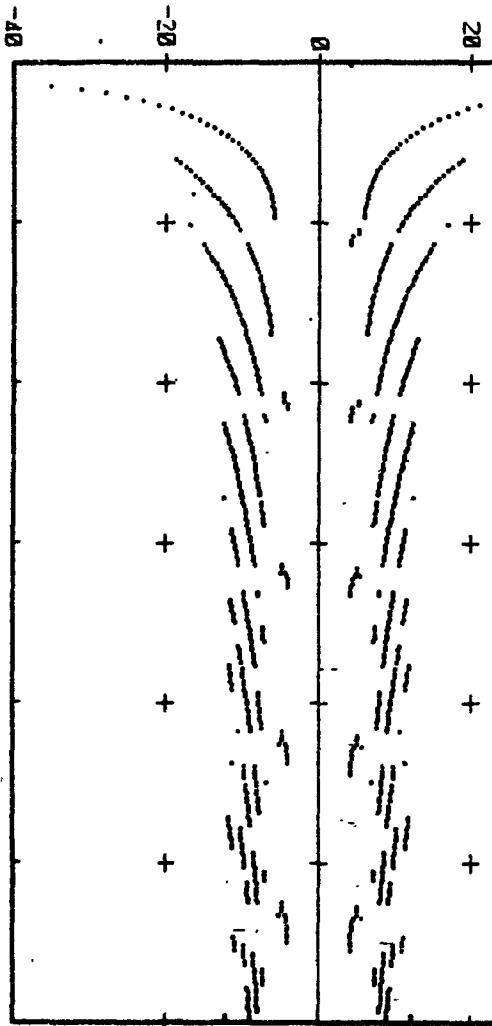
20

10

0

RANGE (KILOMETERS)

ARRIVAL ANGLE



DEPTH IN METERS

6000

4000

2000

0

6000

4000

2000

0

6000

4000

2000

0

6000

4000

2000

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6000

4000

2000

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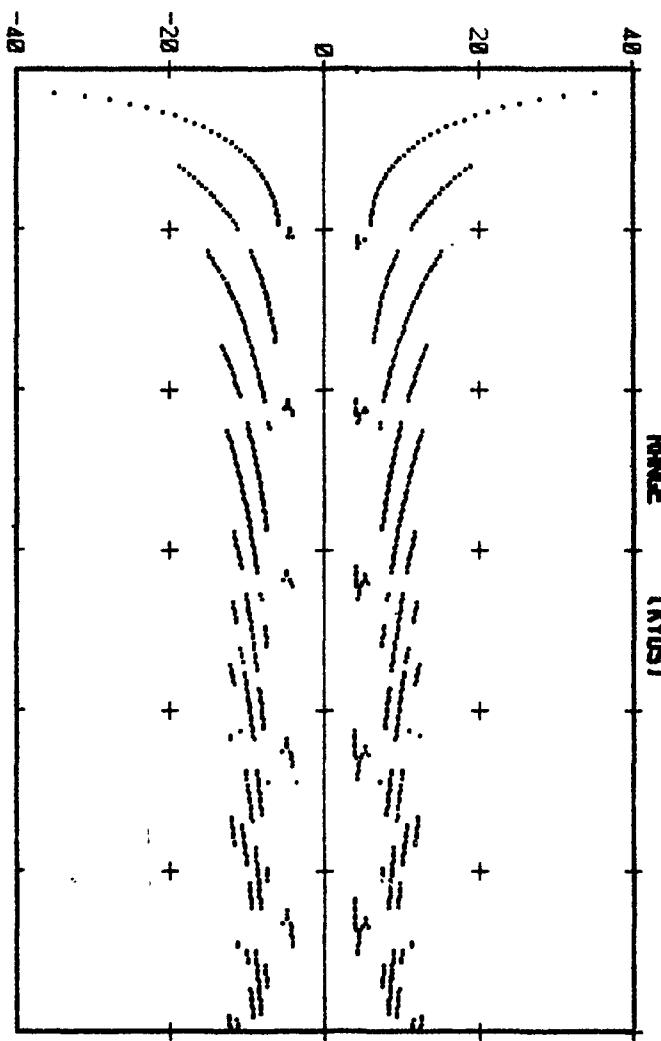
4000

2000

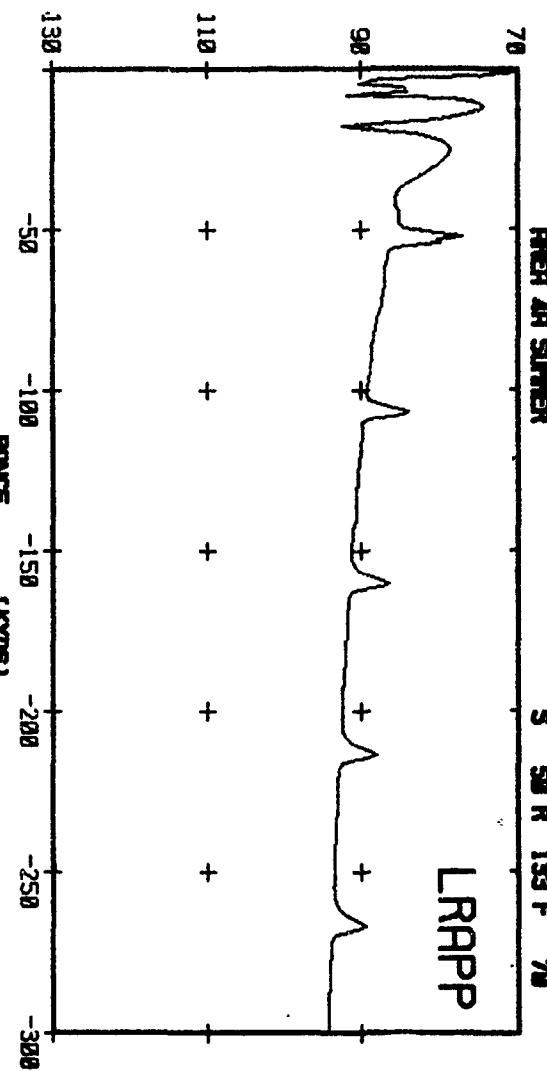
0

6000

ARRIVAL ANGLE

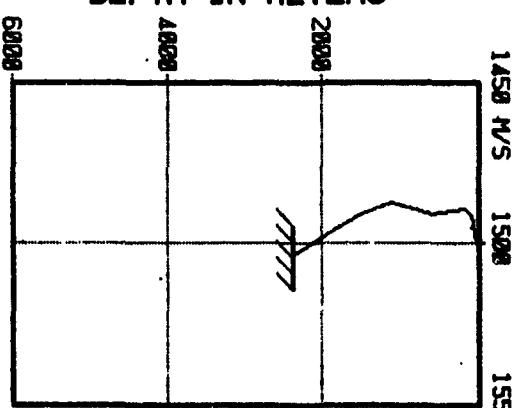


DB LOSS

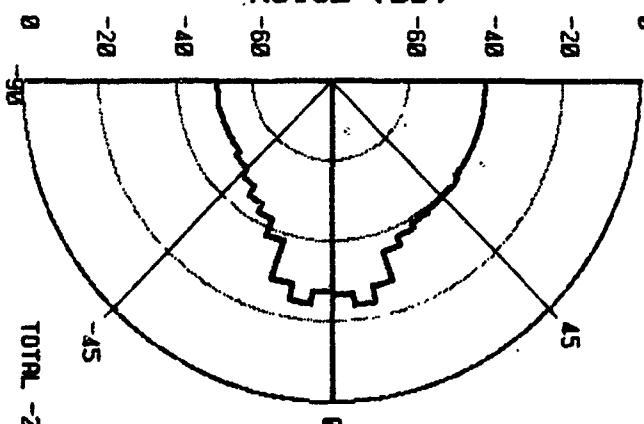


L RAPP

DEPTH IN METERS



NOISE (DB)



TOTAL -20.0 DB

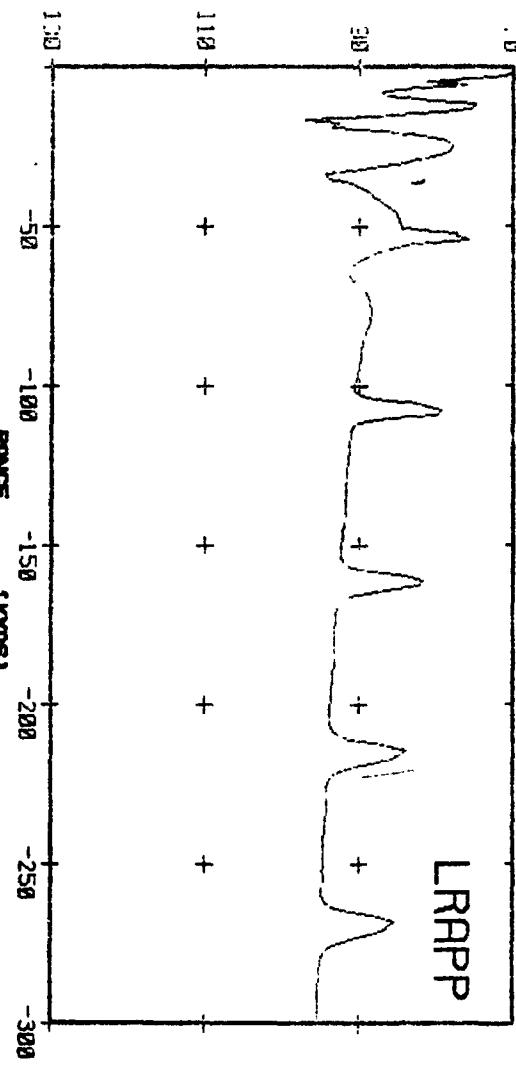
18

RER AR SUMMER

S 233 R 133 F 78

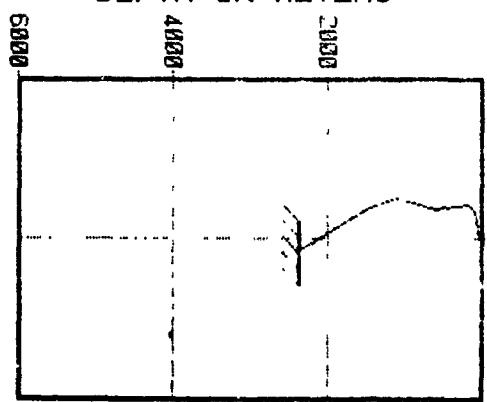
1450 M/S 1500 1550

DB LOSS

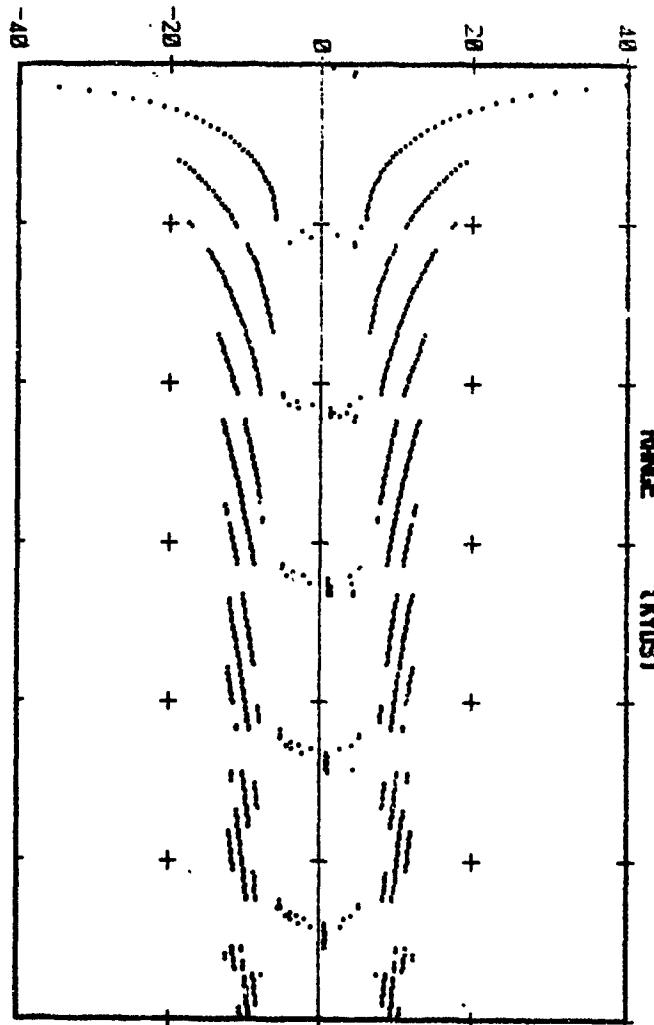


LRAFP

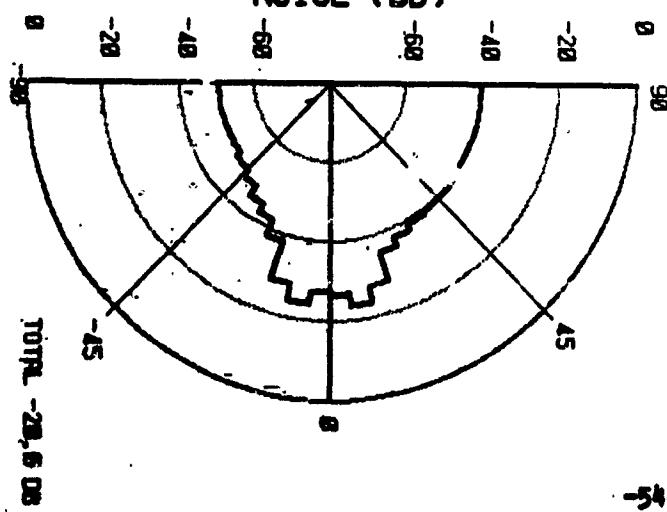
DEPTH IN METERS



ARRIVAL ANGLE



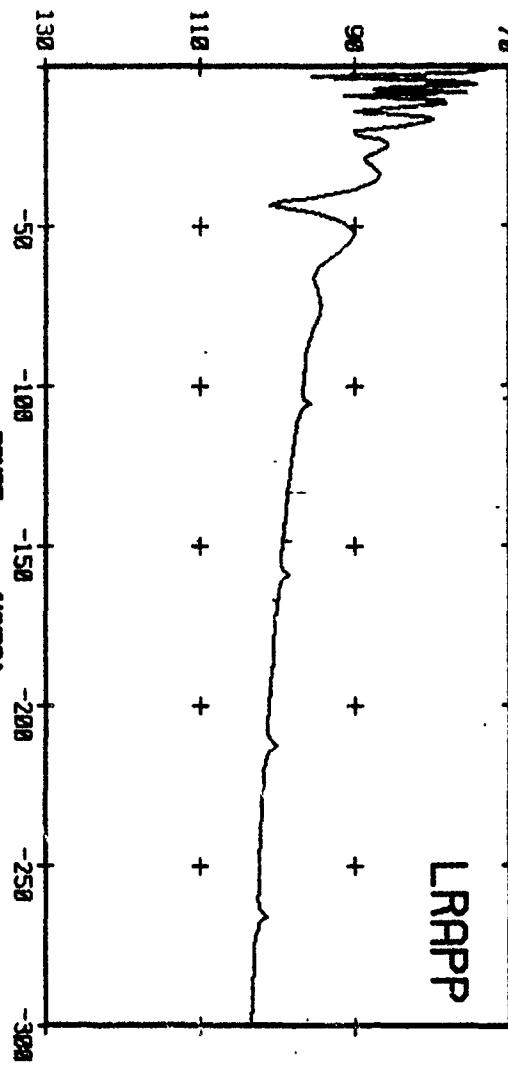
NOISE (DB)



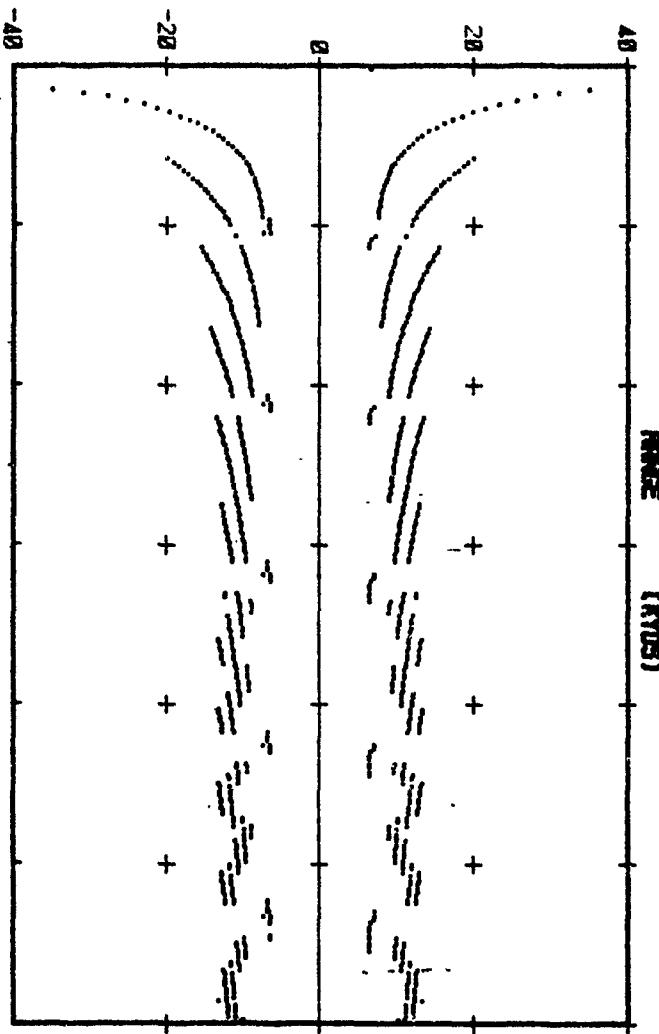
78 FRIER 4A SUMMER 3 20 R 300 F 78

LRAPP

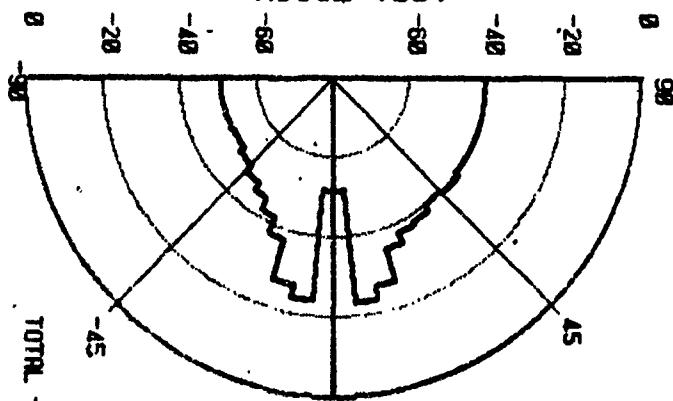
DB LOSS



ARRIVAL ANGLE

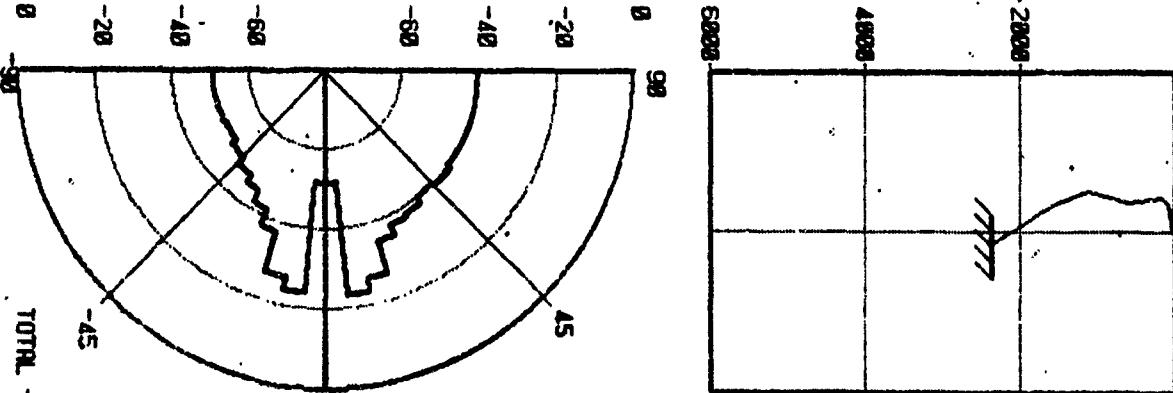


NOISE (DB)



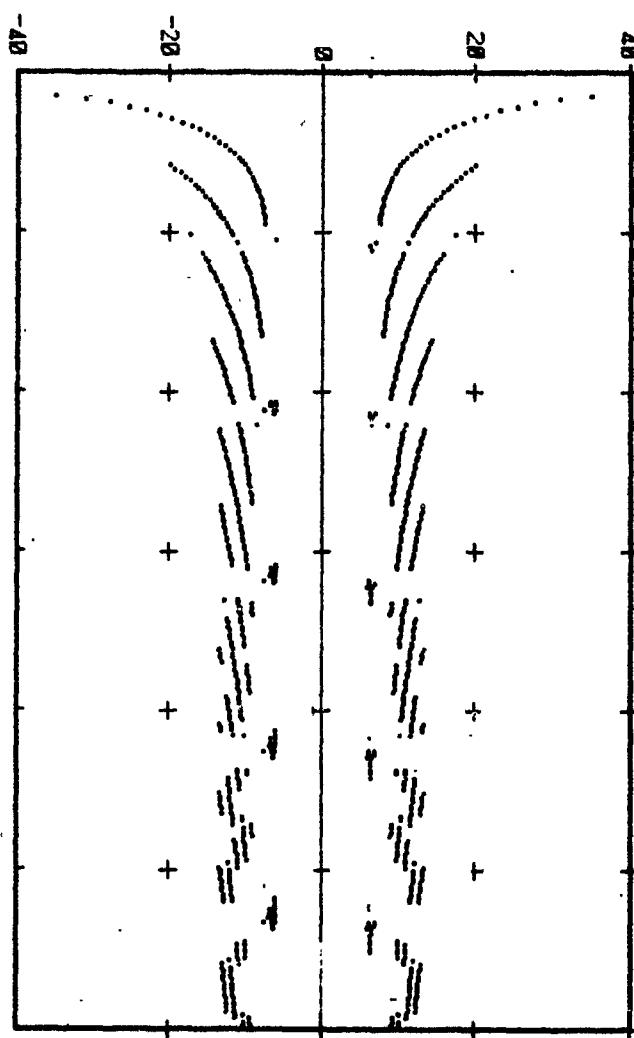
DEPTH IN METERS

1.450 M/S 1500 1550

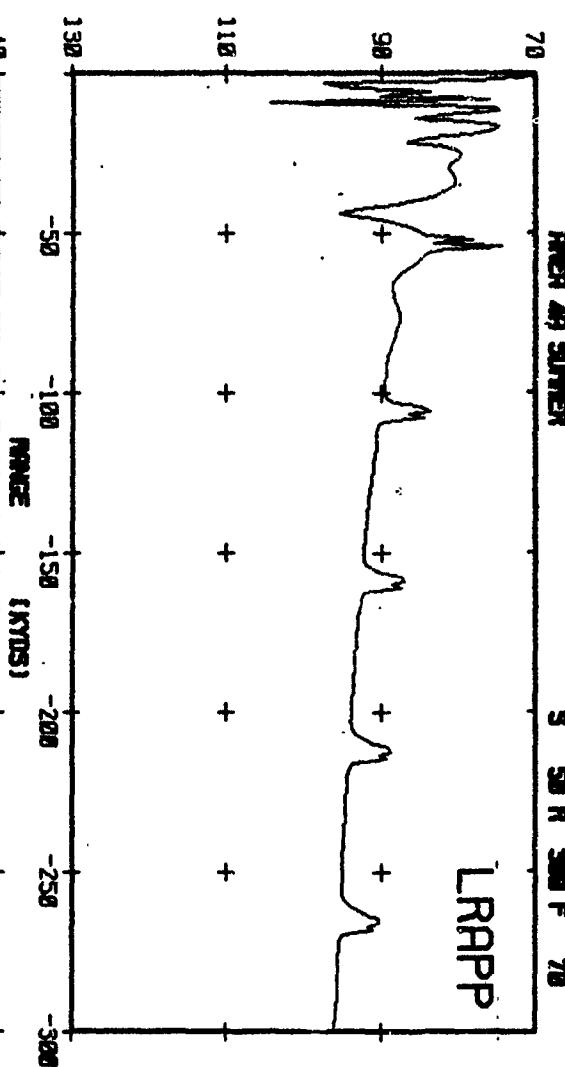


TOTAL -20.7 DB

ARRIVAL ANGLE



DB LOSS



70

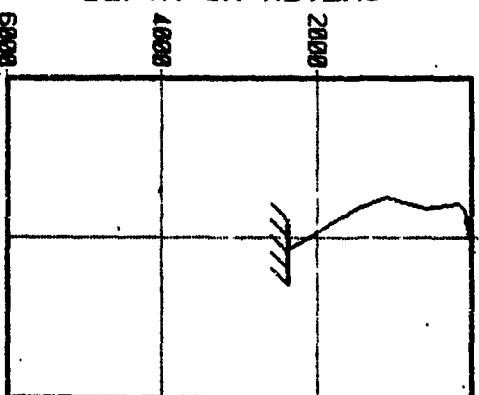
FRIER AIR SIMMER

S SOR 300 F 70

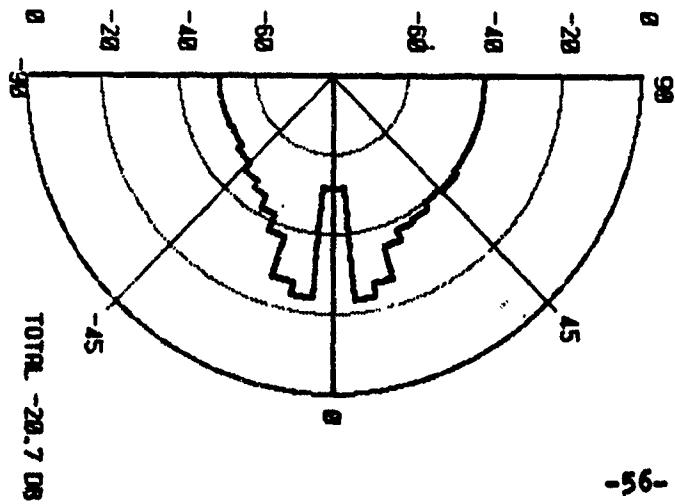
LRAFP

1458 M/S 1500 1550

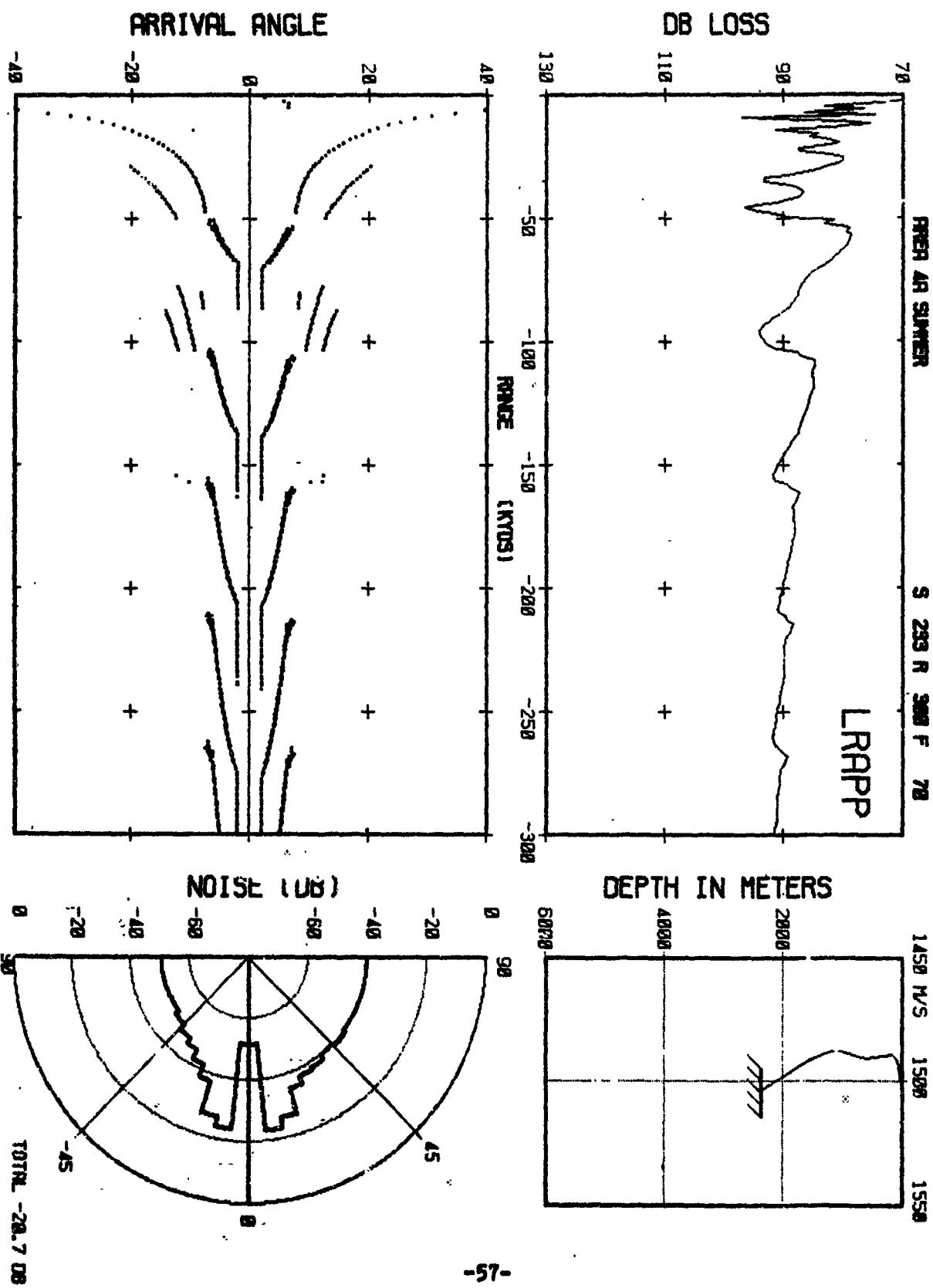
DEPTH IN METERS



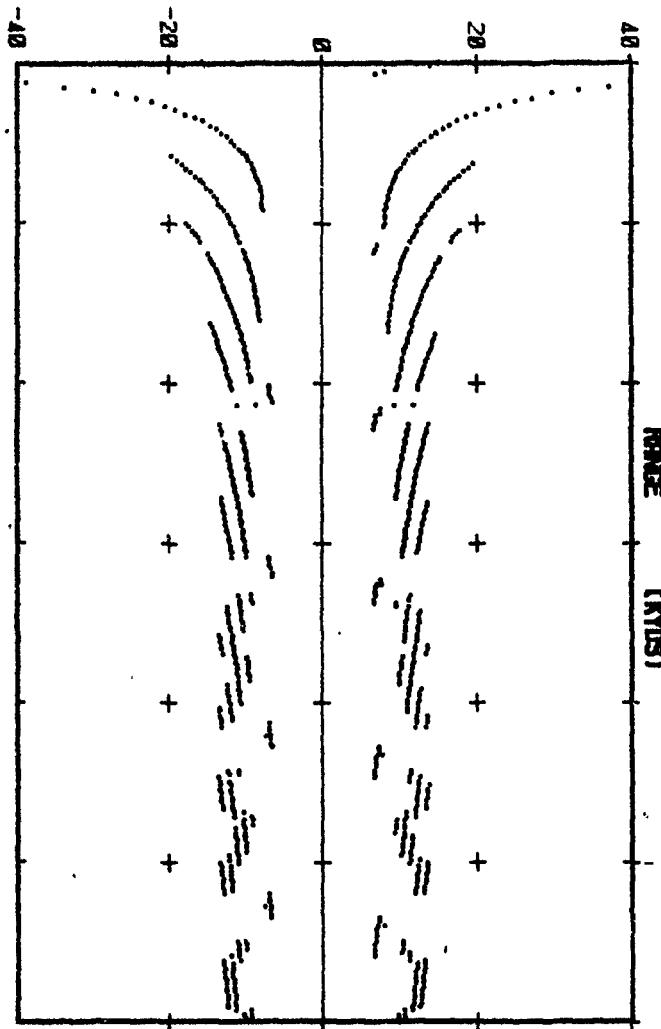
NOISE (DB)



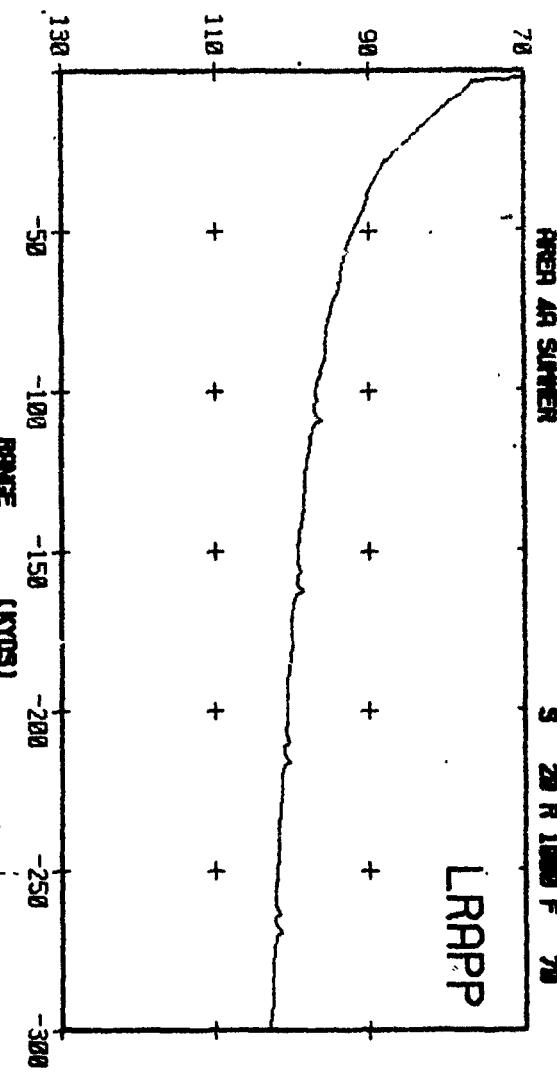
TOTAL -20.7 DB



ARRIVAL ANGLE



DB LOSS



LRAFP

AFER 4A SUMMER

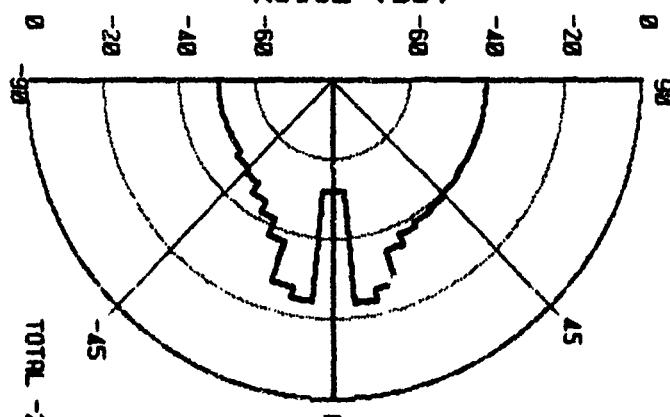
S 28 R 1000 F 70

1450 M/S

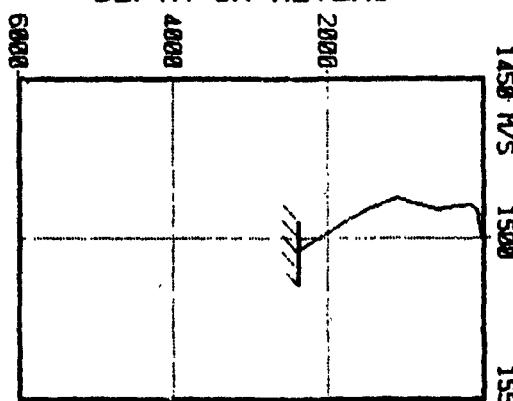
1500

1550

NOISE (DB)



DEPTH IN METERS



TOTAL -20.8 DB

78

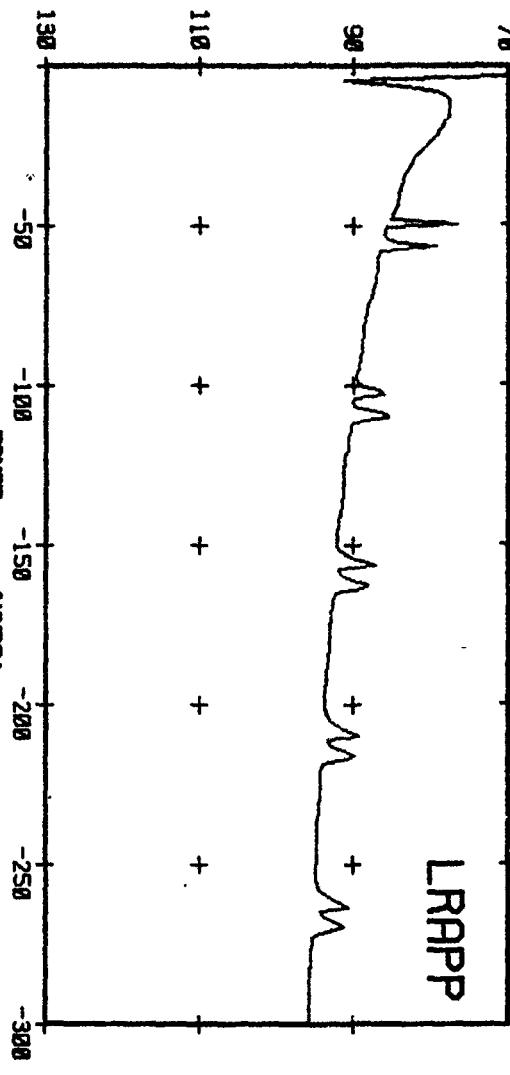
RER 4A SUMMER
S SW R 1000 F 78

S SW R 1000 F 78

1450 M/S 1500
1550

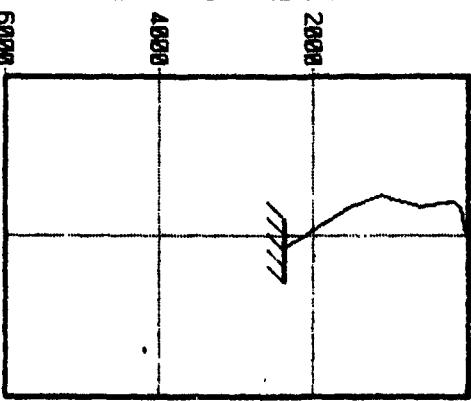
1550

DB LOSS

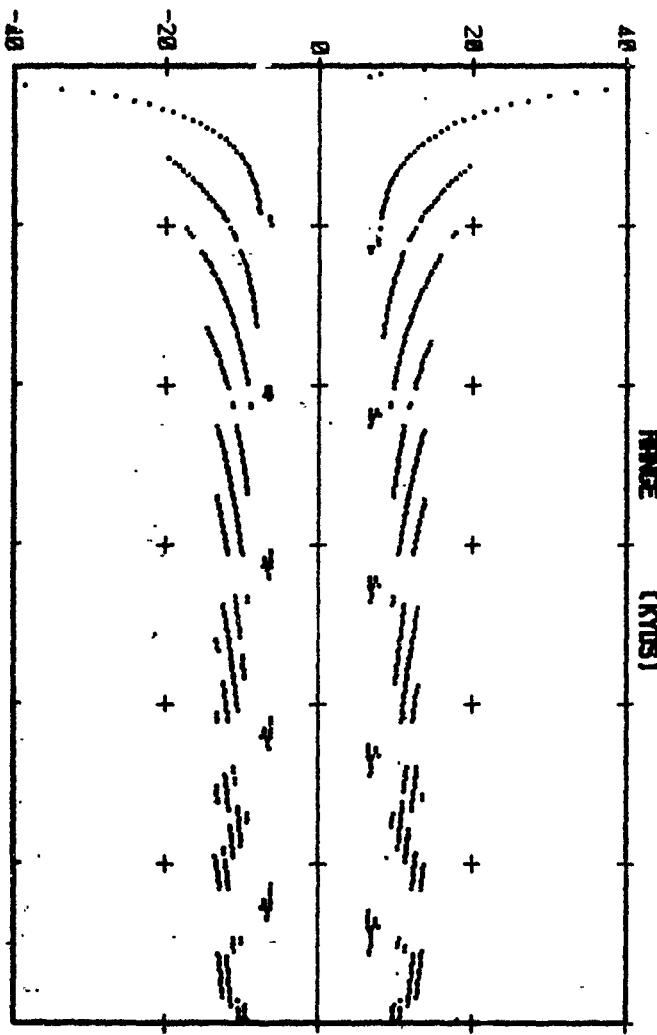


L RAPP

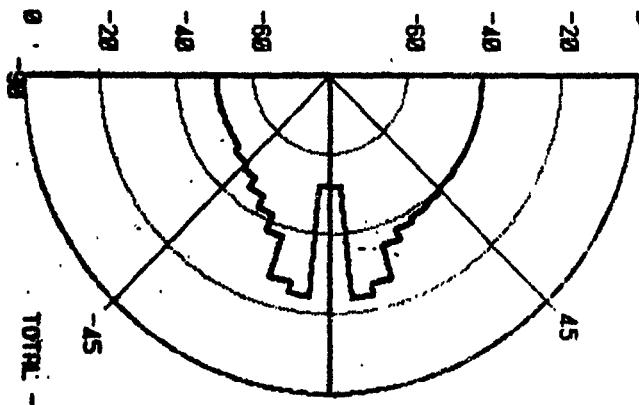
DEPTH IN METERS

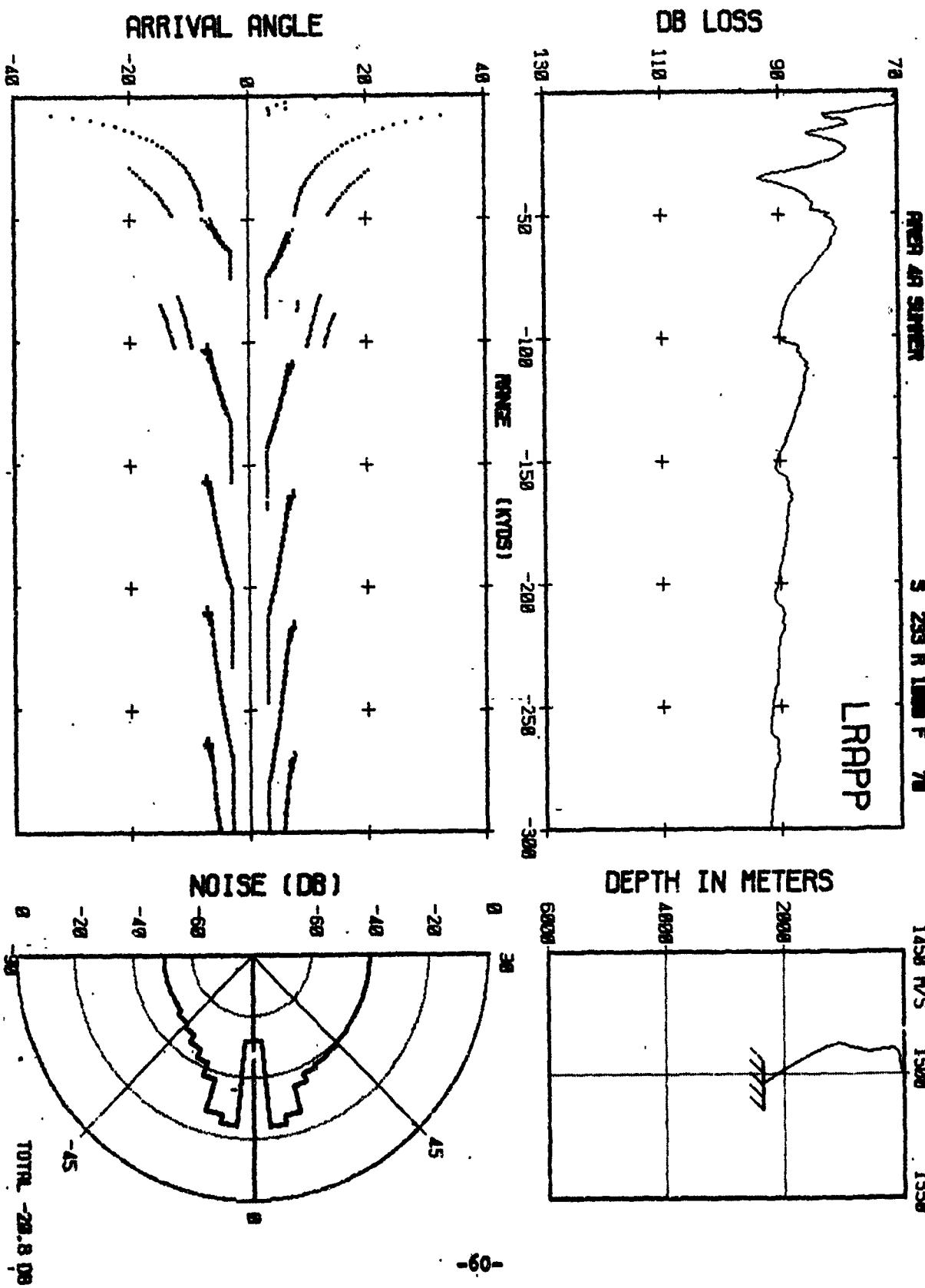


ARRIVAL ANGLE



NOISE (DB)





70

ARR 4R SUMMER

S 29 R 1500 F 70

1450 M/S 1500 1550

1550

DB LOSS

110

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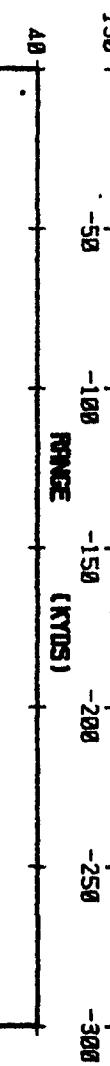
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ARRIVAL ANGLE

20

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DEPTH IN METERS

2000

4000

6000

8000

10000

12000

14000

16000

18000

20000

22000

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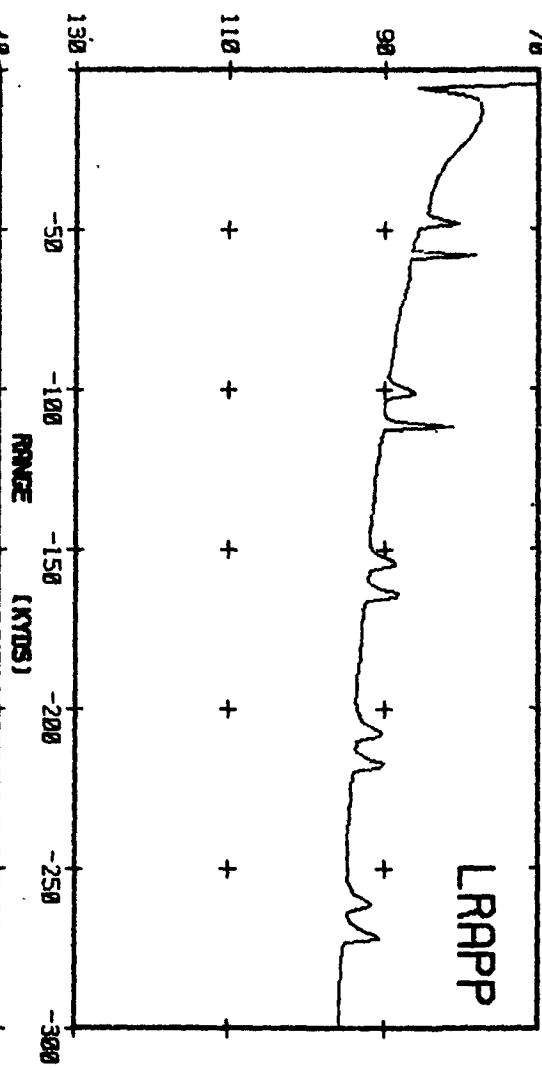
+

RIVER AR SUMMER S 50 R 1500 F 70

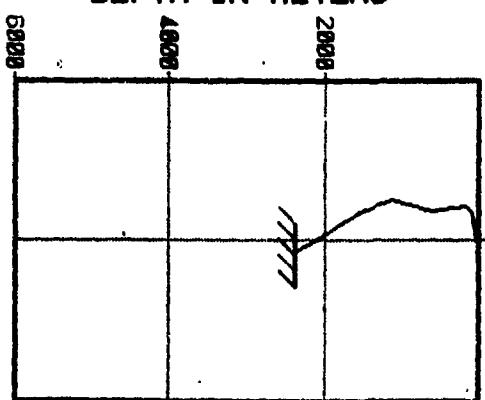
1450 M/S 1500 1550

LRAAPP

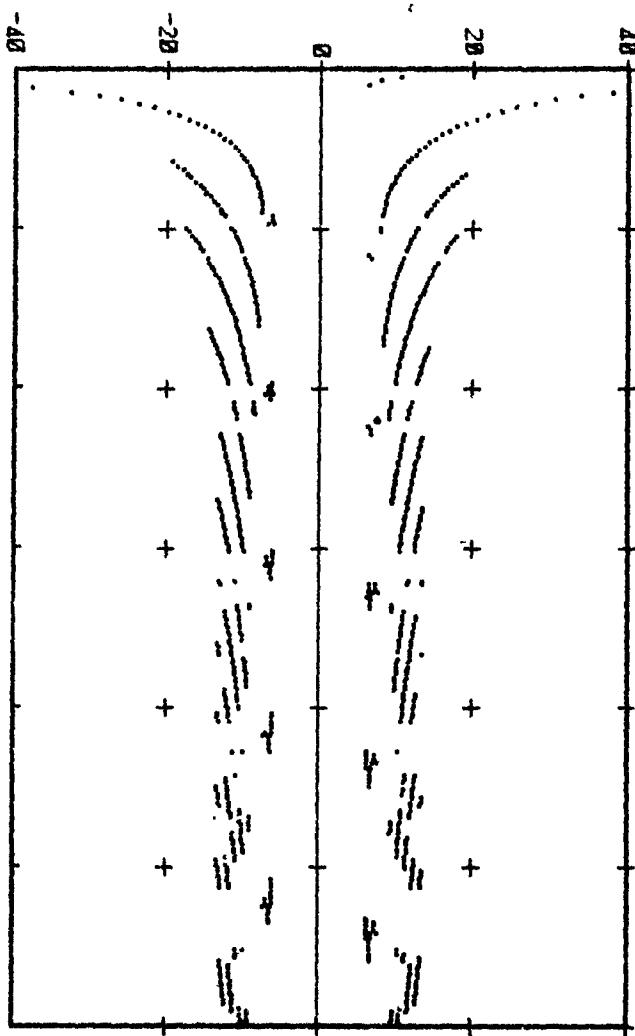
DB LOSS



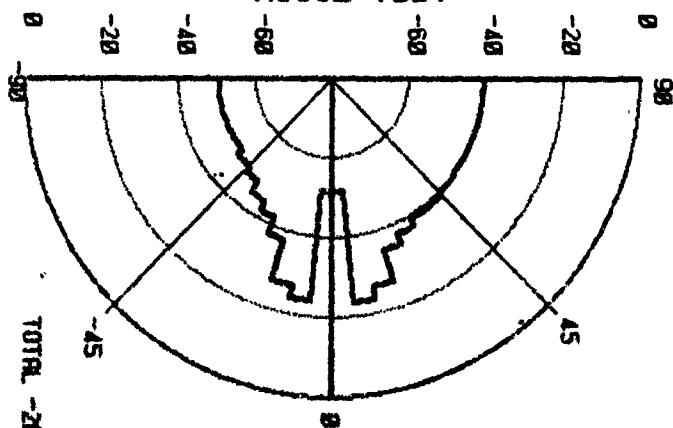
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)



TOTAL -20.8 dB

70

FREE AIR SUMMER

S 233 R 1500 F 70

1450 M/S

1500

1550

DB LOSS

90

110

130

LRAPP

-100 -150 -200 -250 -300

RANGE (KMS)

DEPTH IN METERS

2000

4000

6000

8000

10000

12000

14000

16000

18000

20000

22000

24000

26000

28000

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36000

38000

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72000

74000

76000

78000

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82000

84000

86000

88000

90000

92000

94000

96000

98000

100000

ARRIVAL ANGLE

+20

0

-20

-40

-60

-80

-100

-120

-140

-160

-180

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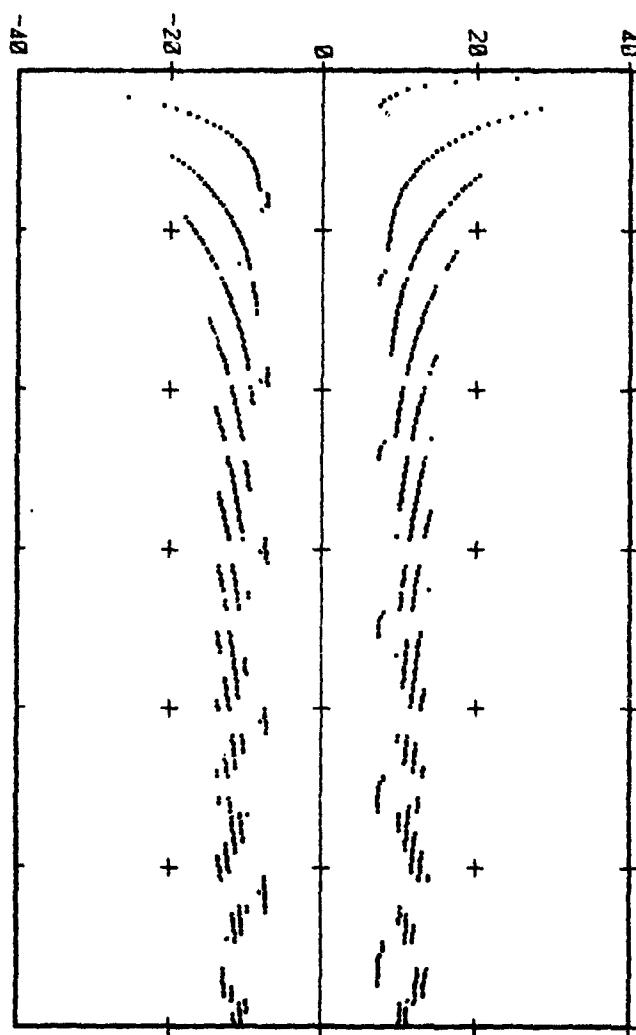
-4760

-4780

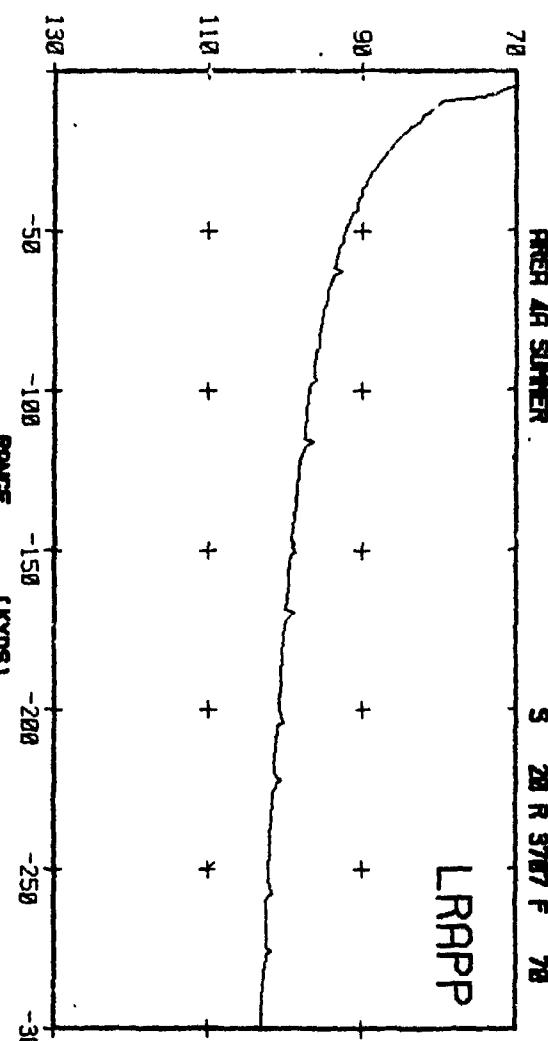
-4800

-4820

ARRIVAL ANGLE

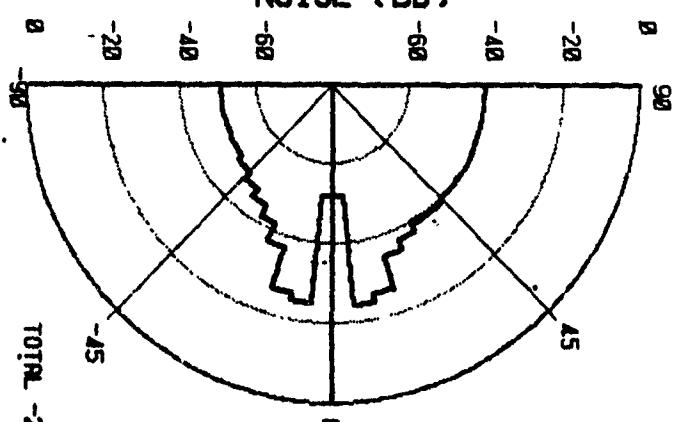


DB LOSS

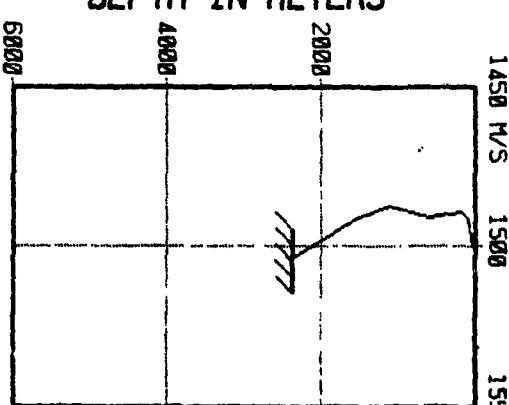


LRAAPP

NOISE (DB)

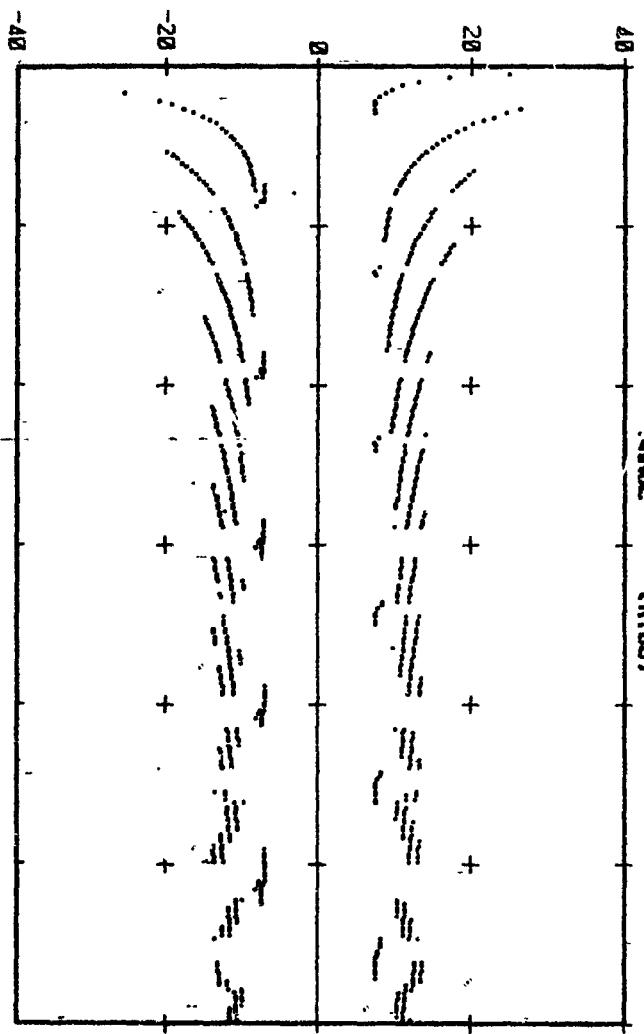


DEPTH IN METERS

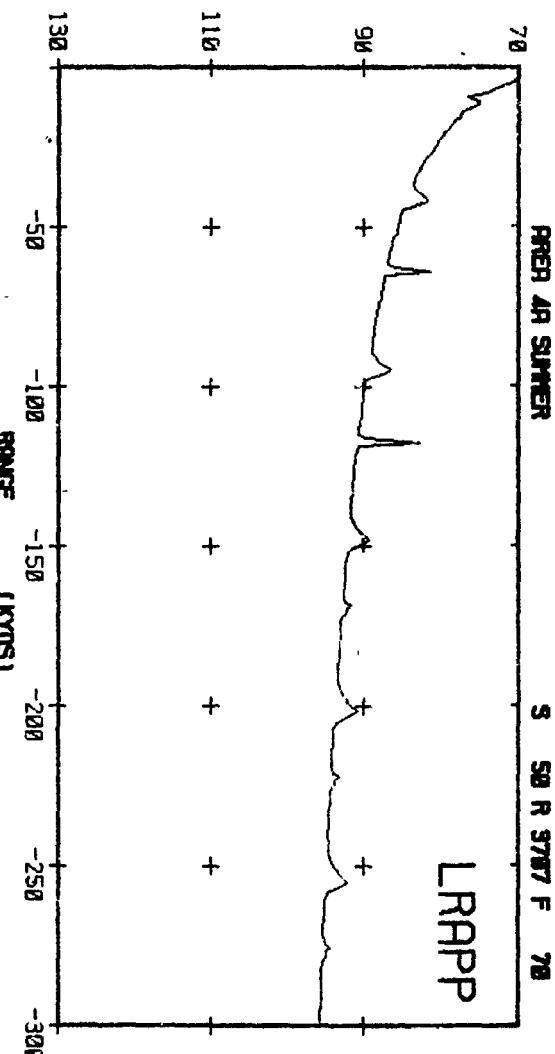


TOTAL -21.0 DB

ARRIVAL ANGLE



DB LOSS



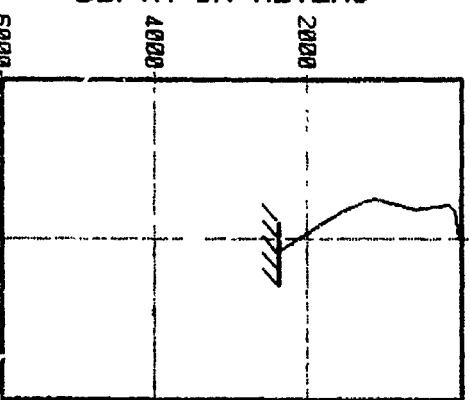
PRED 4R SUMMER

S S0 R 57W F 70

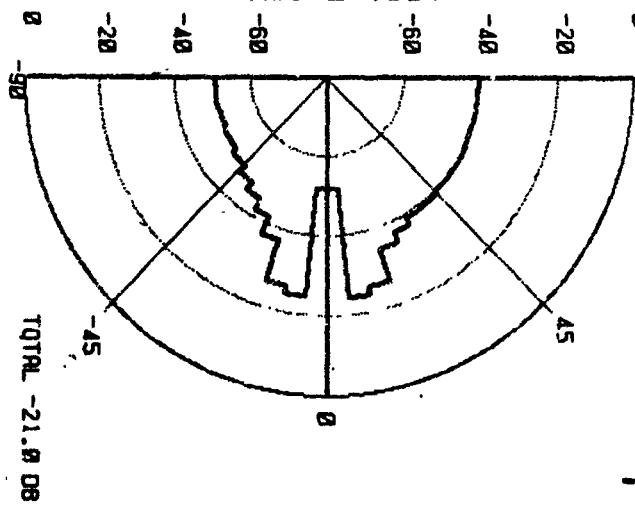
LRAAPP

1450 M/S 1500 1550

DEPTH IN METERS

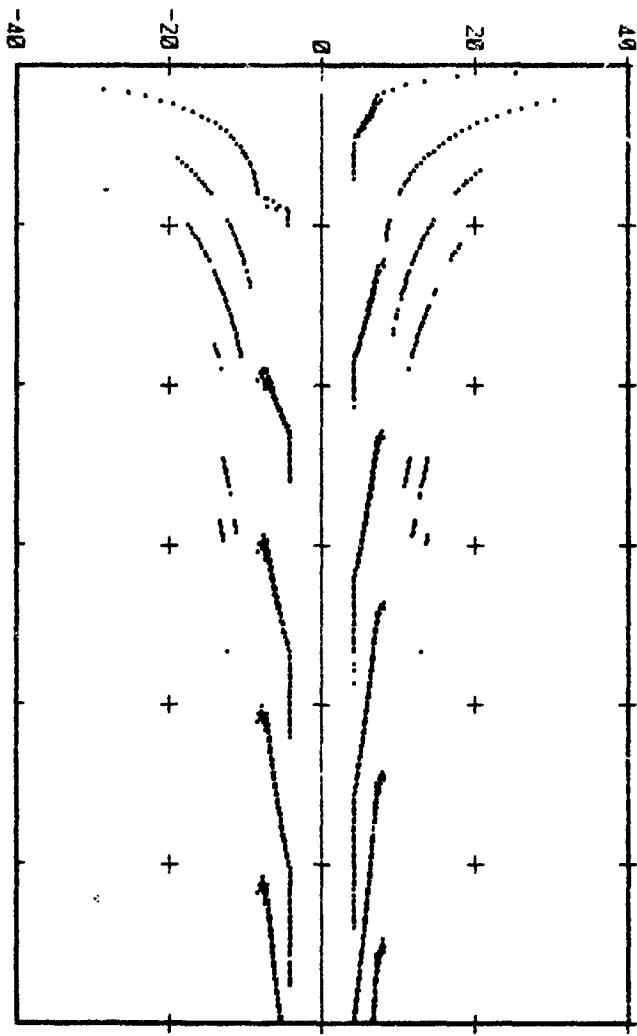


NOISE (DB)

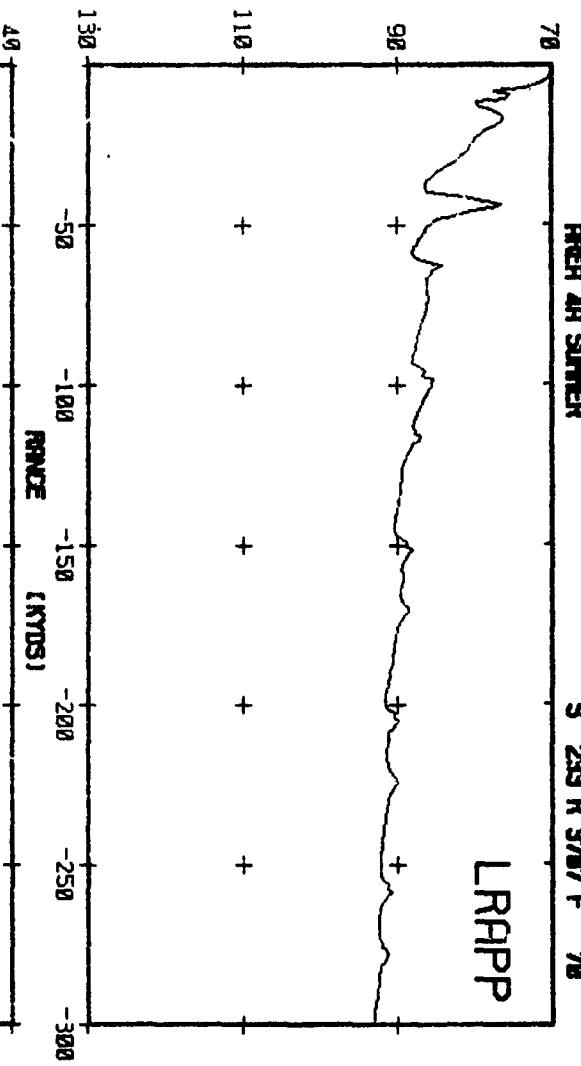


TOTAL -21.0 DB

ARRIVAL ANGLE



DB LOSS



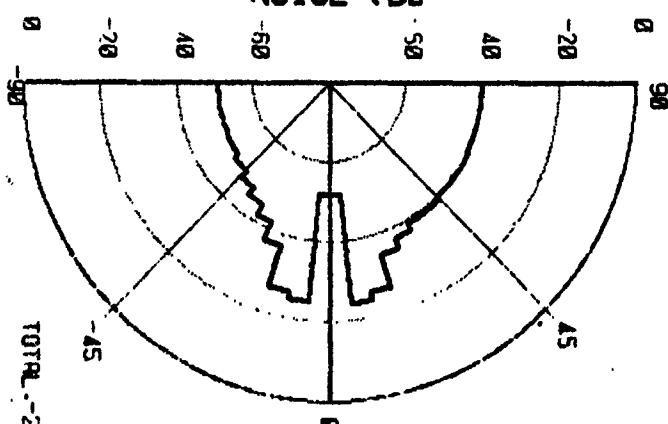
FREE AIR SUMMER

S 233 R 377 F 78

LRAPP

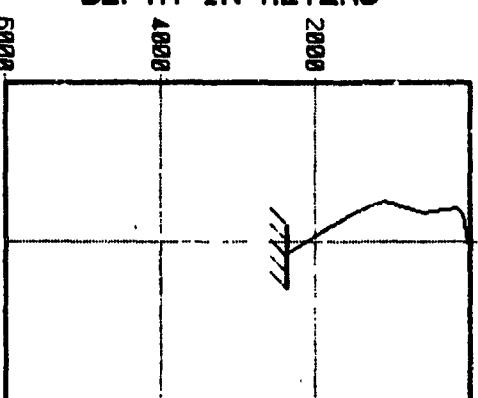
1450 M/S 1520 1558

NOISE (DB)



TOTAL -21.0 dB

DEPTH IN METERS

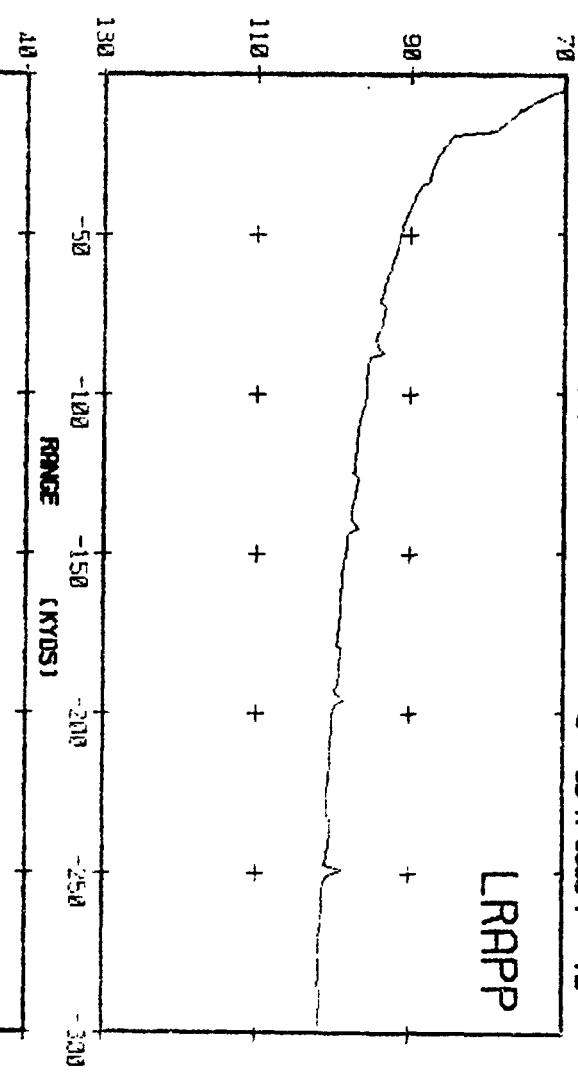


FRIER 4R SUMMER

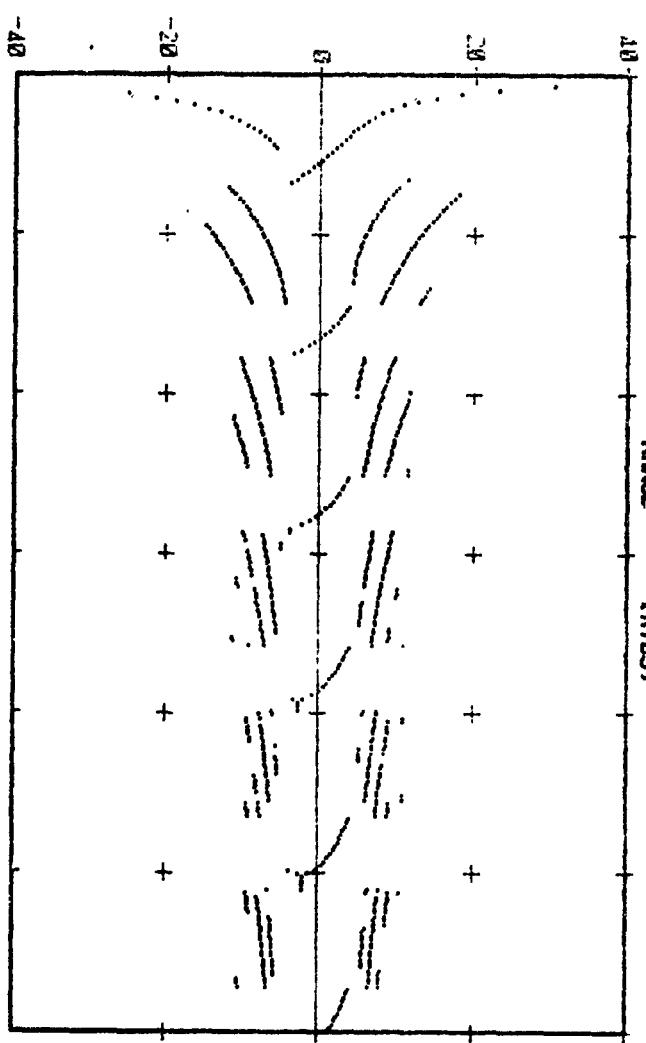
S' 20 R 6956 F 78

1450 M/S 1500 1550

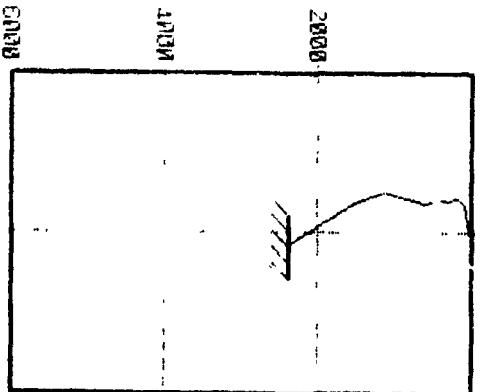
DB LOSS



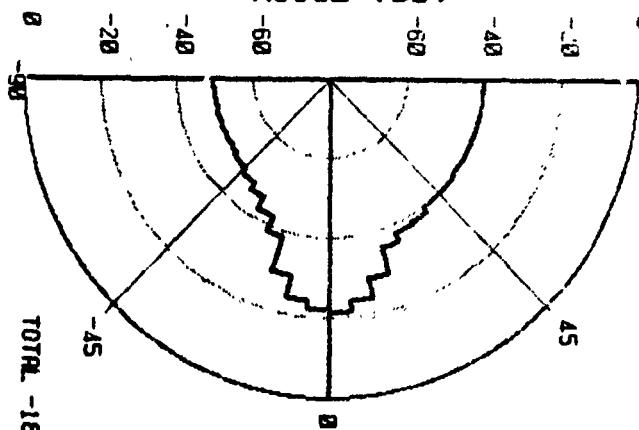
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



TOTAL -18.3 DB

78

RIVER 4A SUMMER

S 50 R 6658 F 78

1450 M/S 1500 1550

DB LOSS

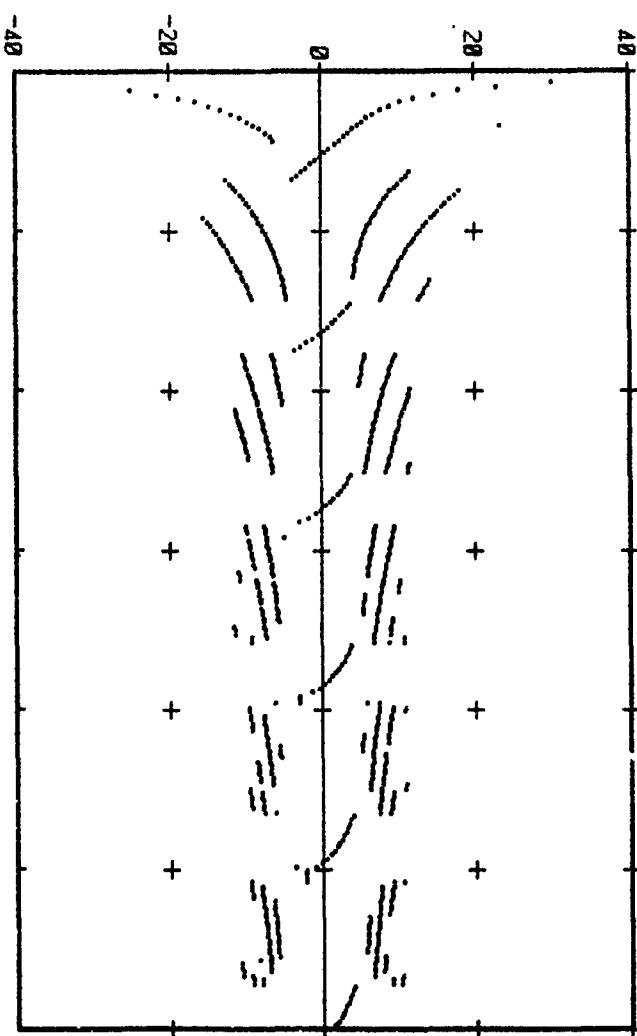
130
110
90

+ + + + + + +

40 -20 -100 -150 -200 -250 -300

RANGE (KMS)

ARRIVAL ANGLE



LRAPP

DEPTH IN METERS

2000

6000

4000

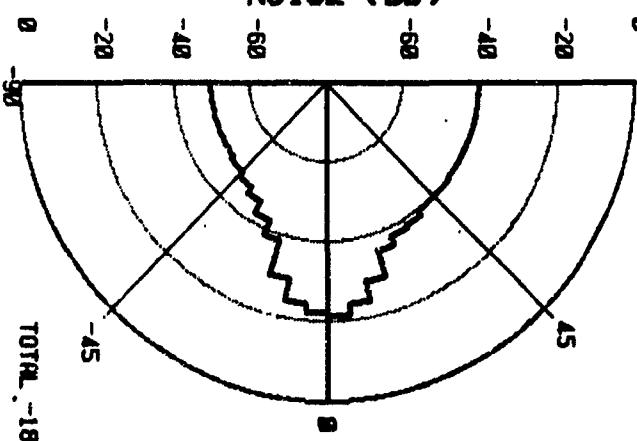
2000

0

90

-68-

NOISE (DB)



TOTAL -18.3 DB

FREQ 49 SUMMER

S 233 R 6558 F 70

1450 M/S 1500 1550

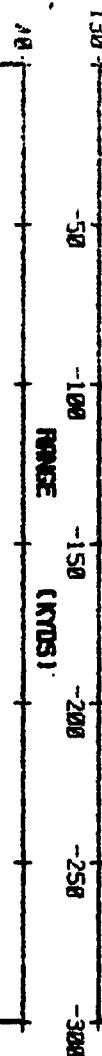
LRAPP

DB LOSS

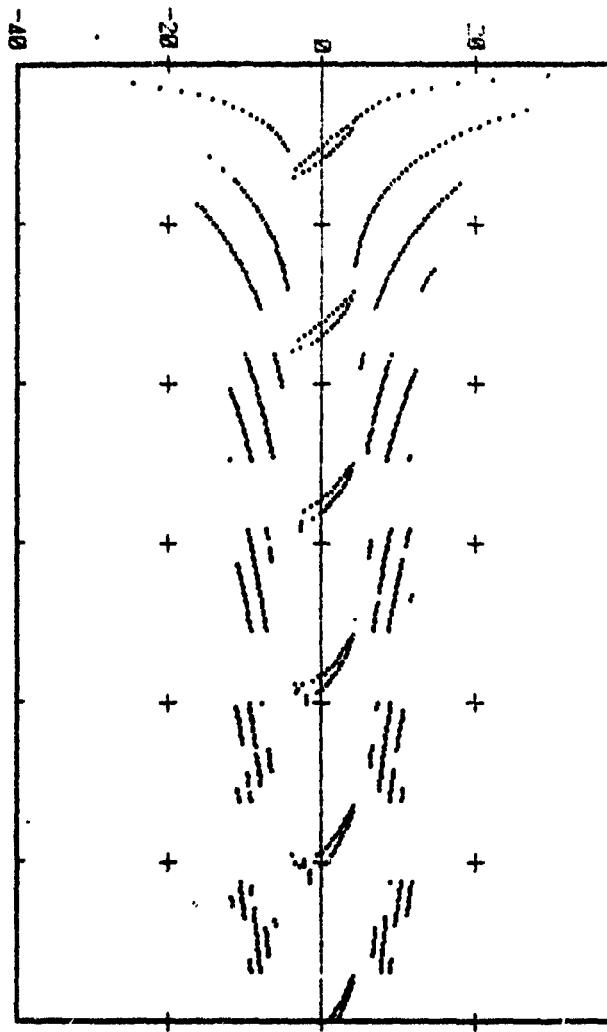
:10

98

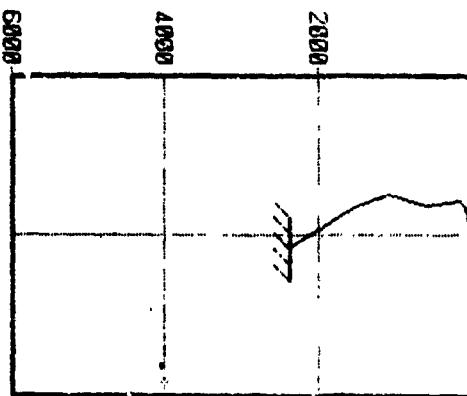
76



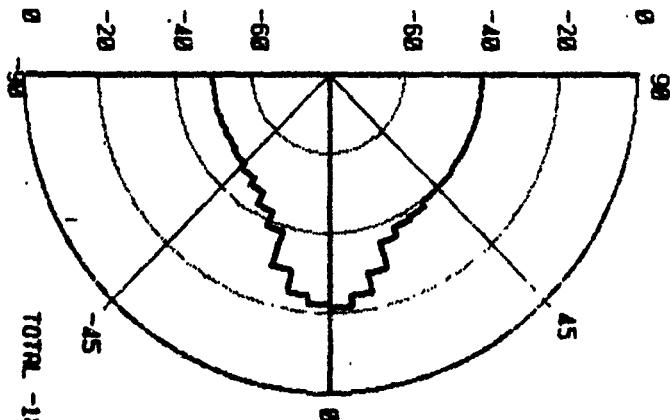
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



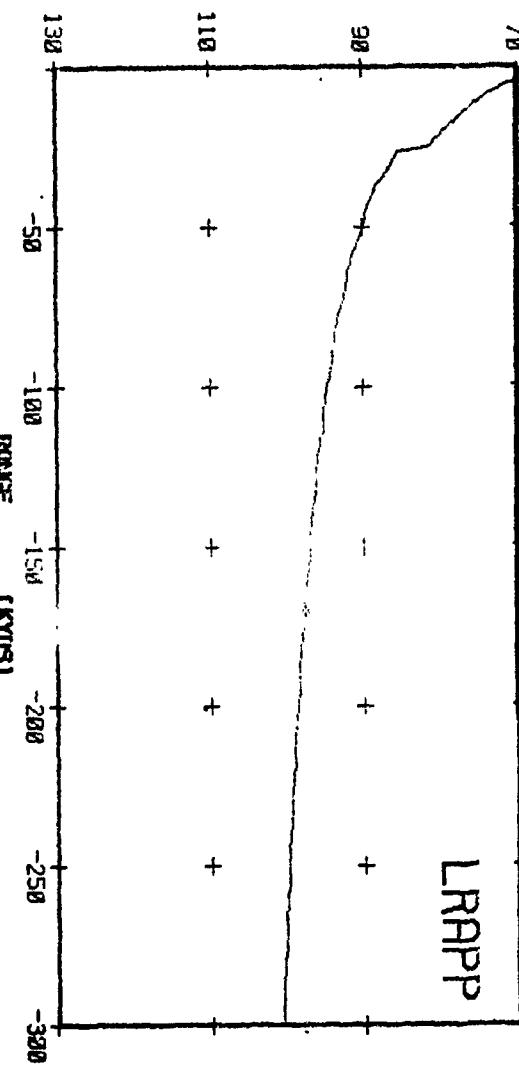
Total -18.3 dB

AKER 4A SUMNER

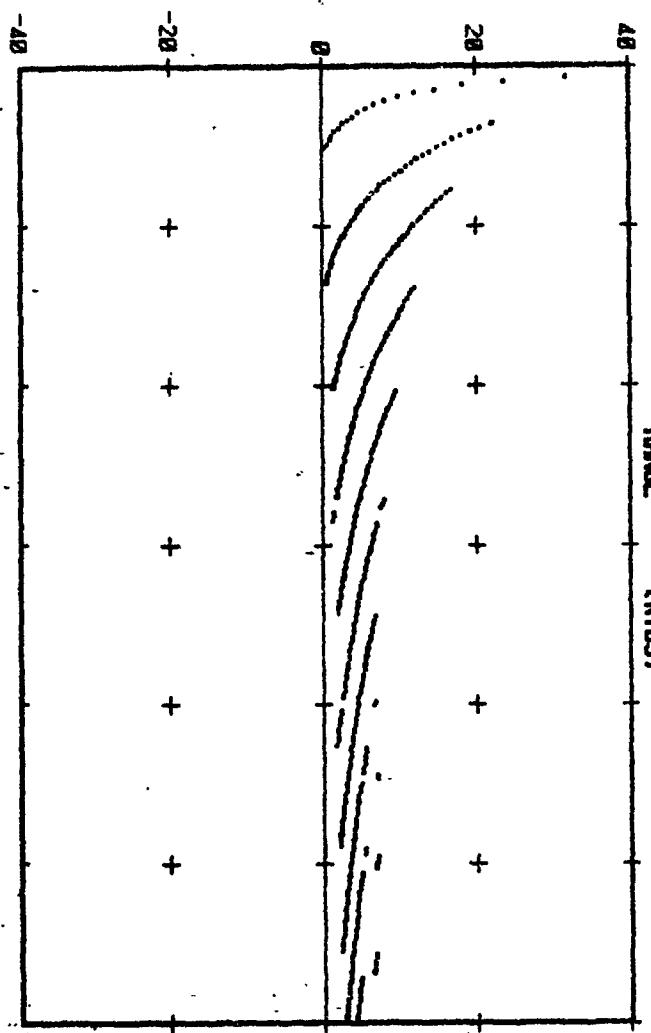
S 20 R 7708 F 78

1450 M/S 1520 1558

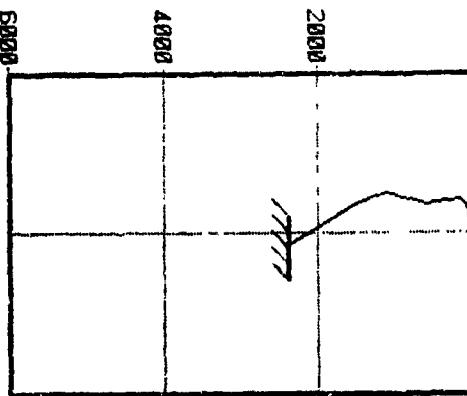
DB LOSS



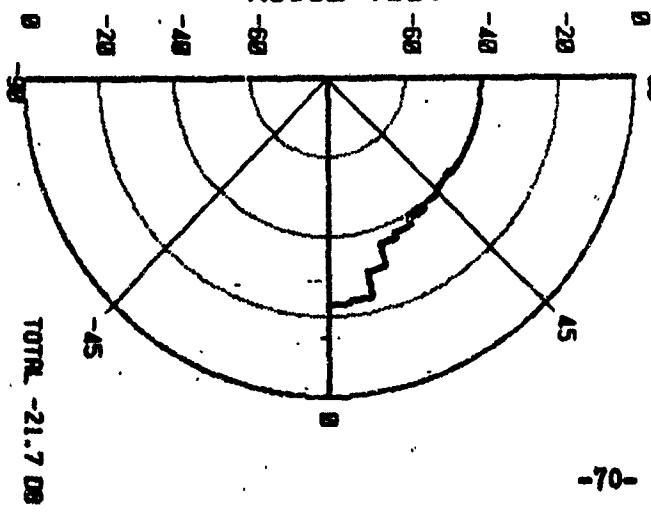
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



78

AER AR SIMER

S SRR 7700 F 70

1450 HVS 1500 1550

LRAPP

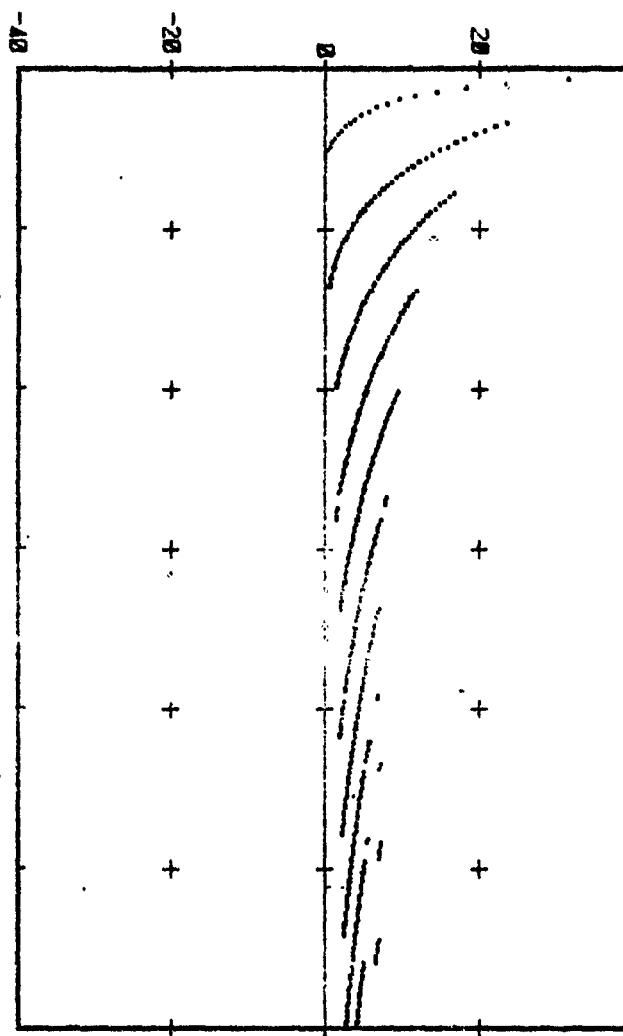
DB LOSS

130
110
90
70

+ + + + + + + + + +

RANGE (KMS)

ARRIVAL ANGLE



DEPTH IN METERS

0

90

1800

2700

3600

4500

5400

6300

7200

8100

9000

9900

10800

11700

12600

13500

14400

15300

16200

17100

18000

18900

19800

20700

21600

22500

23400

24300

25200

26100

27000

27900

28800

29700

30600

31500

32400

33300

34200

35100

36000

36900

37800

38700

39600

40500

41400

42300

43200

44100

45000

45900

46800

47700

48600

49500

50400

51300

52200

53100

54000

54900

55800

56700

57600

58500

59400

60300

61200

62100

63000

63900

64800

65700

66600

67500

68400

69300

70200

71100

72000

72900

73800

74700

75600

76500

77400

78300

79200

80100

81000

81900

82800

83700

84600

85500

86400

87300

88200

89100

90000

90900

91800

92700

93600

94500

95400

96300

97200

98100

99000

100000

101000

102000

103000

104000

105000

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307000

9

PINGER SUMMER

S 233 R 7193 F 78

1450 M/S 1500 1554

LRPPIP

DB LOSS

110 + + + + + + + + + +

130 -50 -100 -150 -200 -250 -300

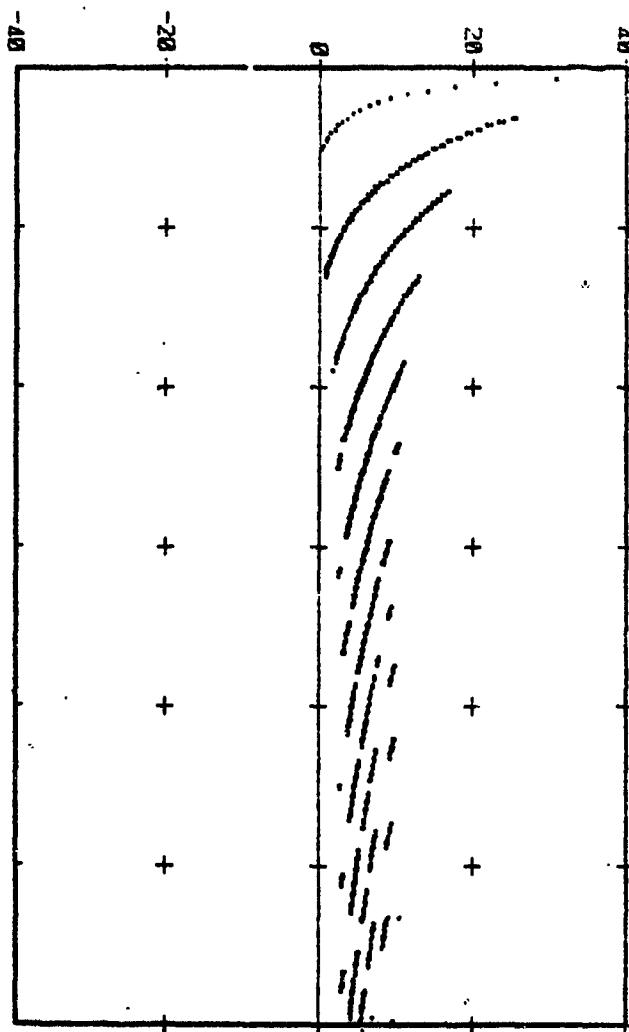
RANGE (KMS)

DEPTH IN METERS

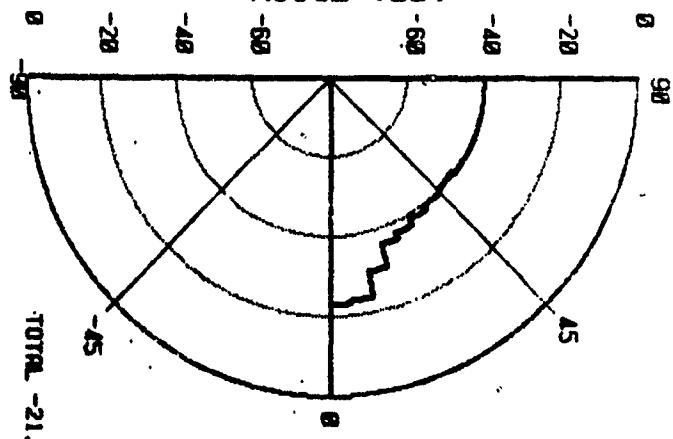
2000 4000 6000

0

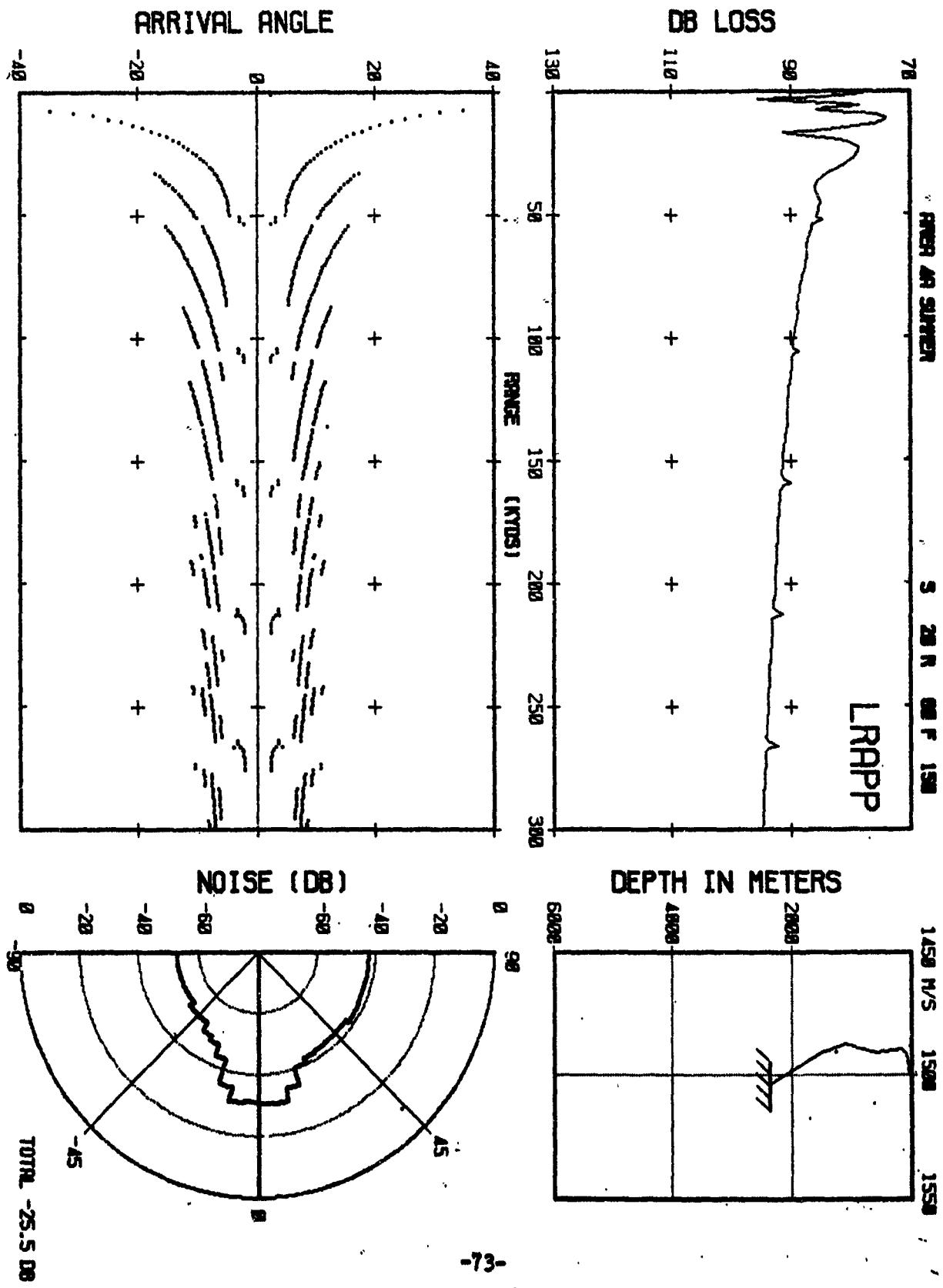
ARRIVAL ANGLE



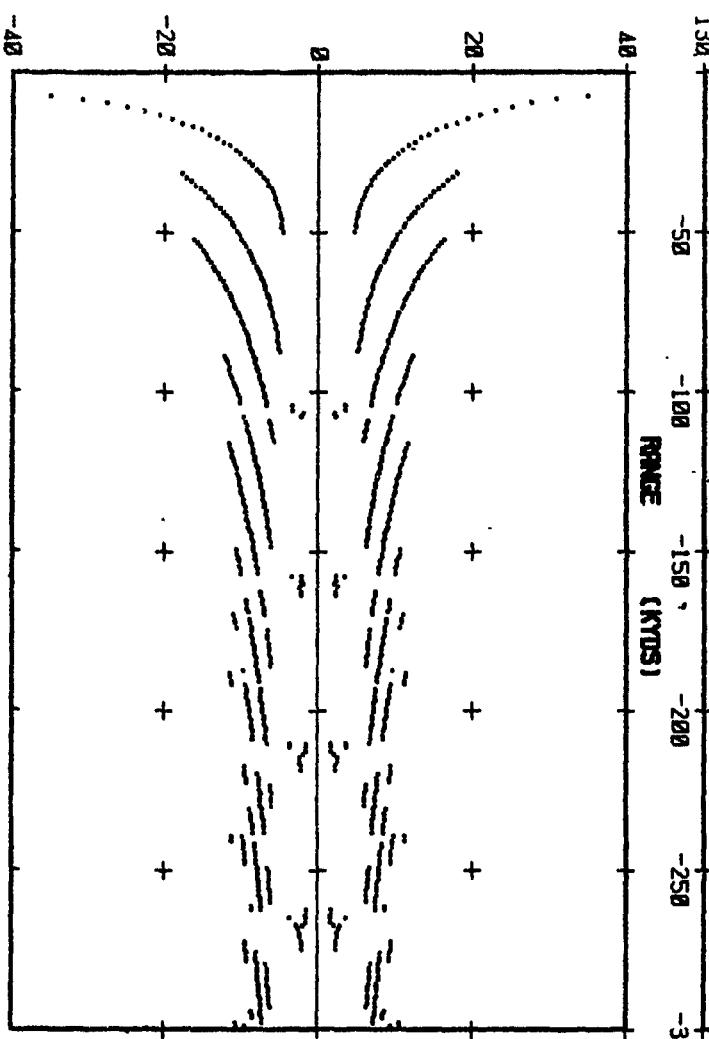
NOISE (DB)



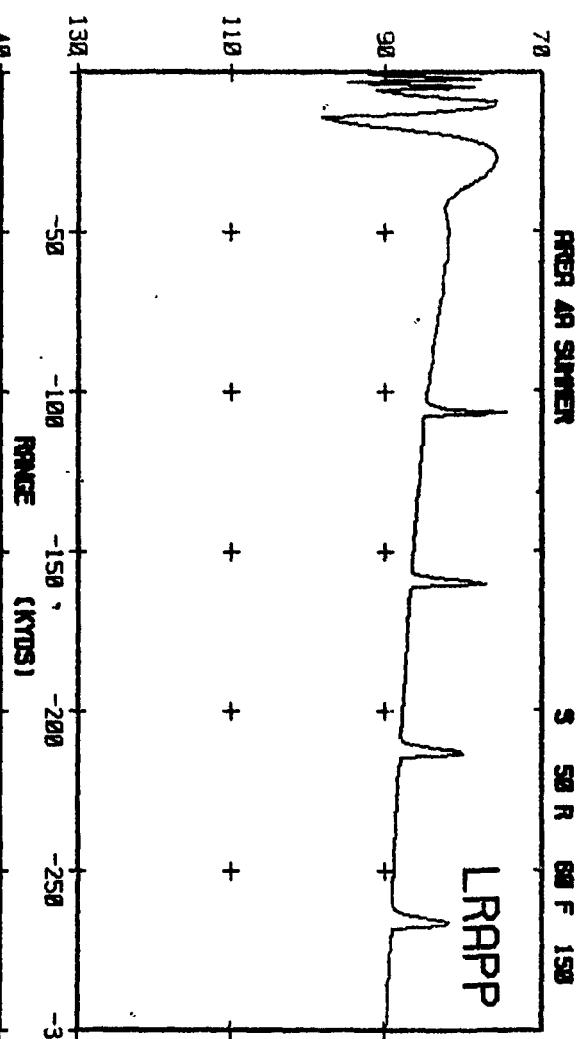
TOTAL -21.7 DB



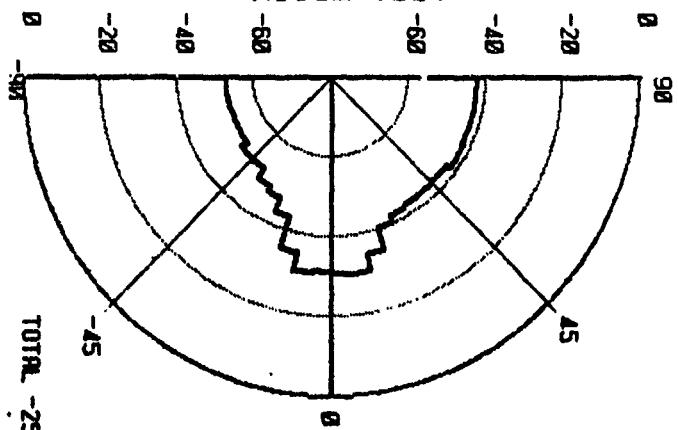
ARRIVAL ANGLE



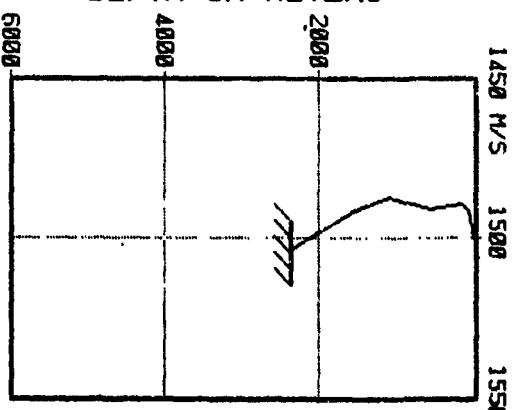
DB LOSS



NOISE (DB)



DEPTH IN METERS



70

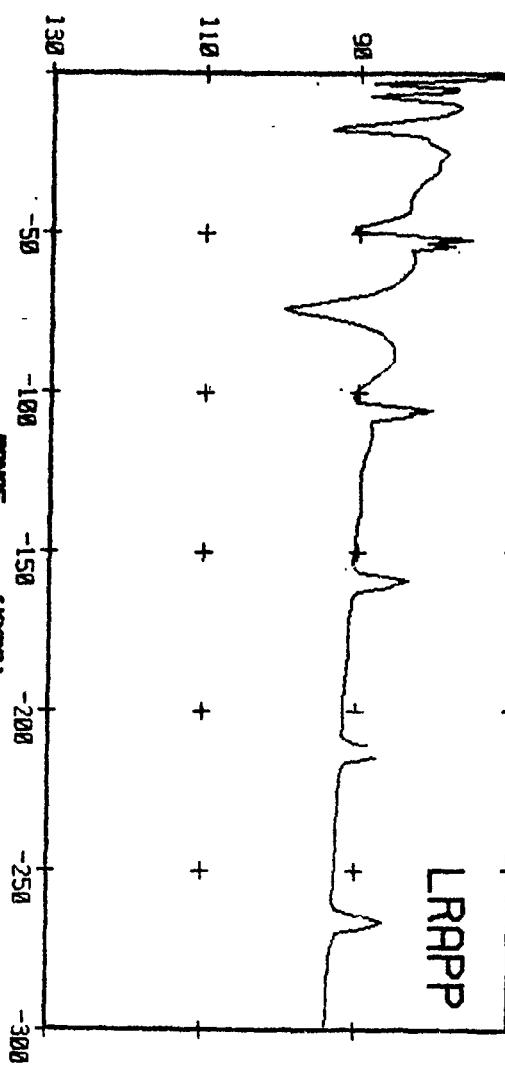
RER 4R SUMMER

S 233 R 69 F 159

1450 N/S 1500

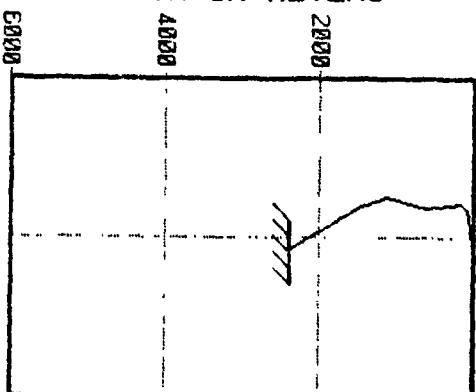
1550

DB LOSS

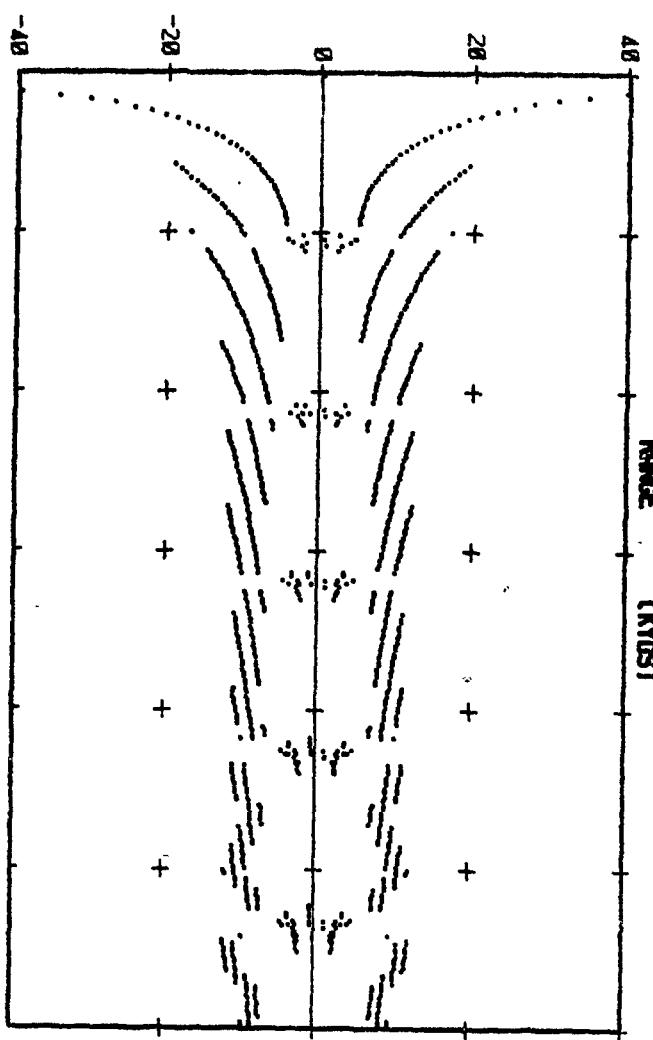


LRAAPP

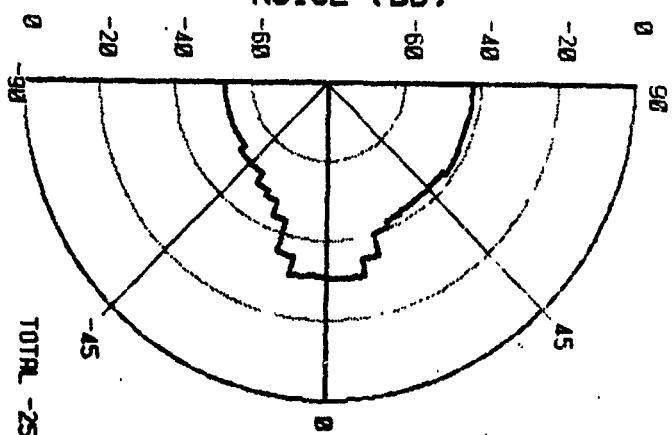
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)



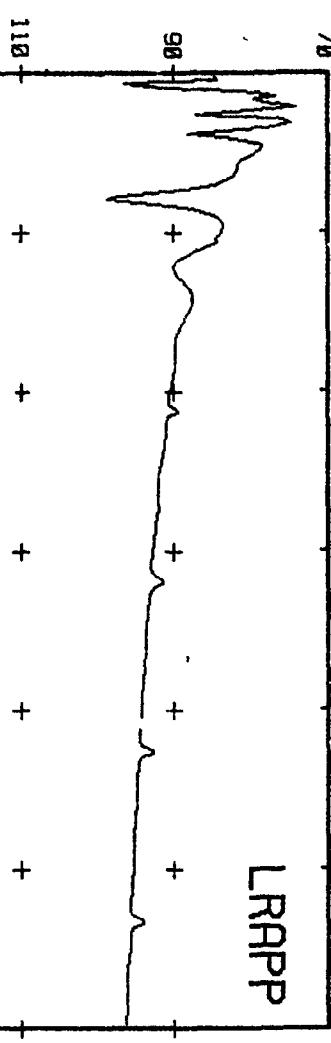
AREA 4A SUMMER

S 20 R 193 F 150

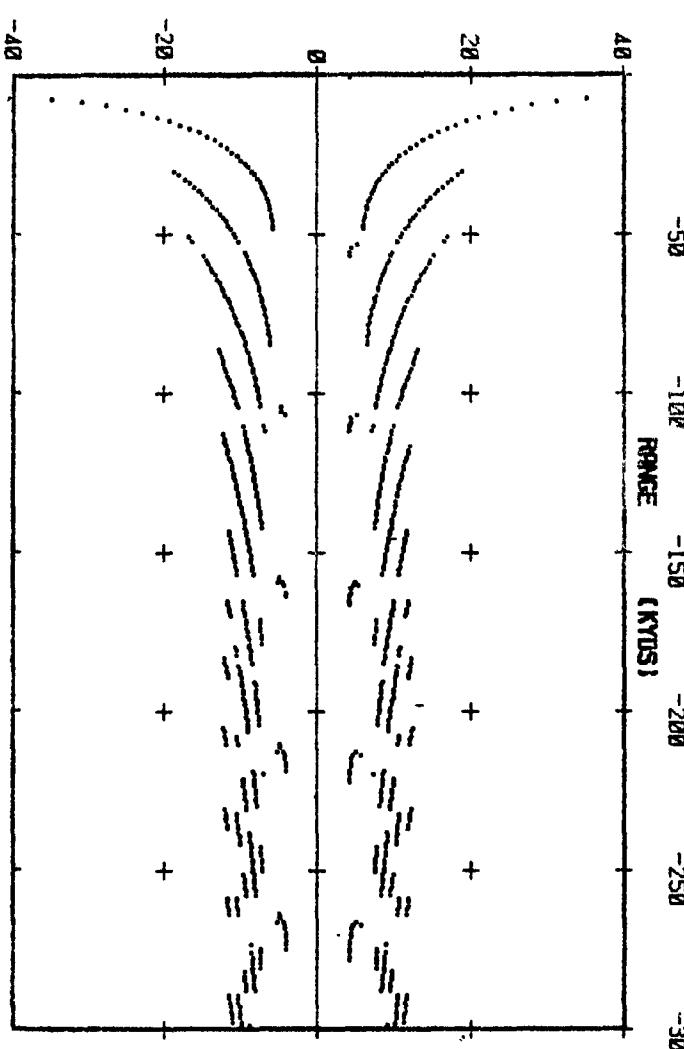
1450 M/S 1500 1550

DB LOSS

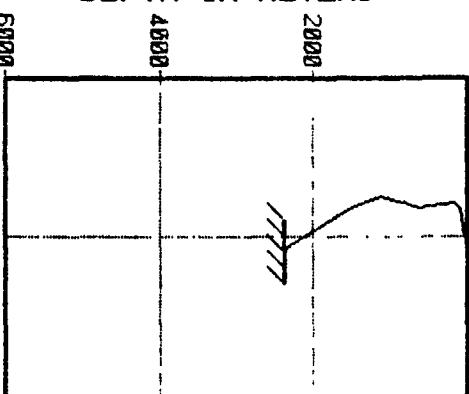
LRAPP



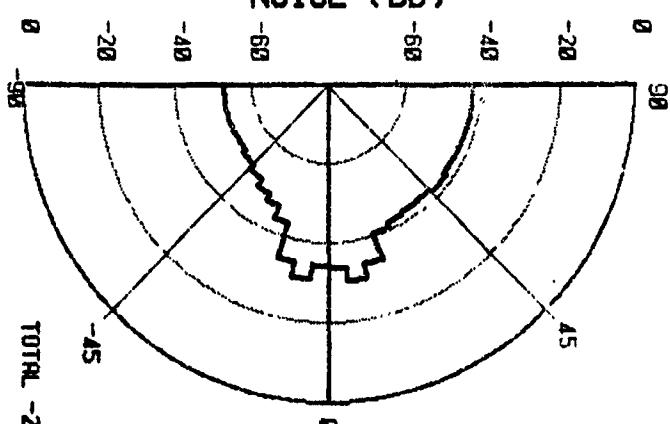
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



TOTAL -26.2 DB

78

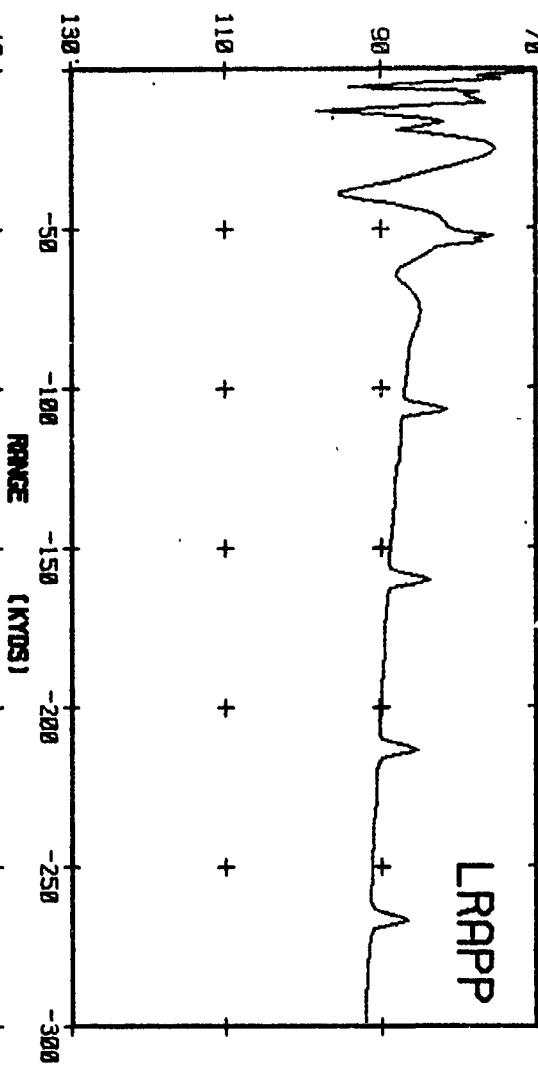
FREQ 4K SUMMER

S 50 R 139 F 150

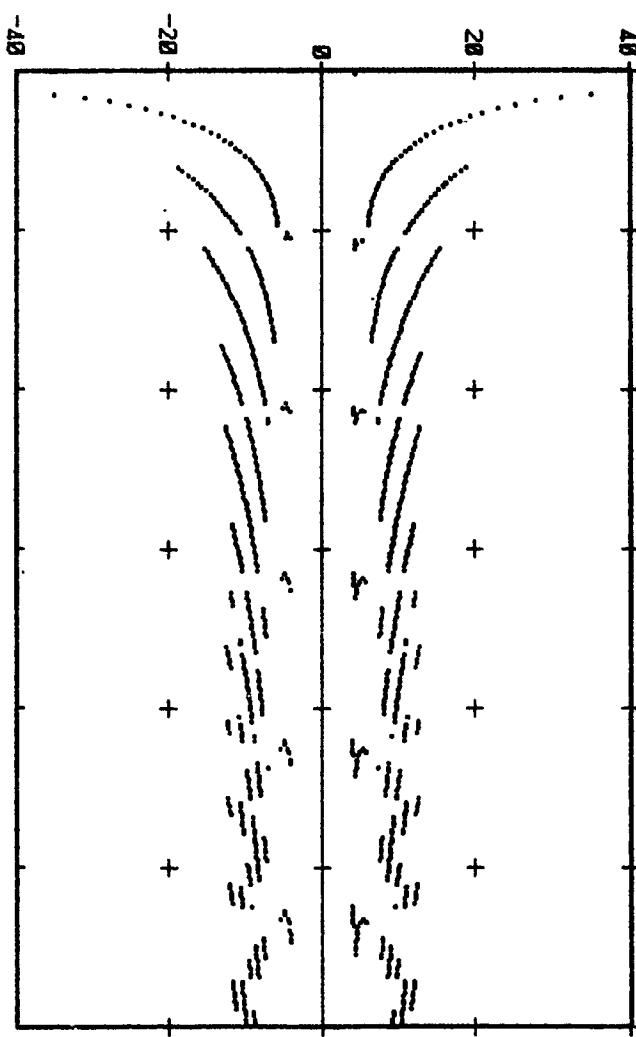
1450 M/S 1500 1550

DB LOSS

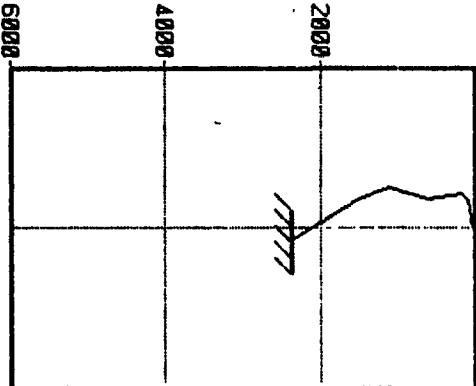
LRAPP



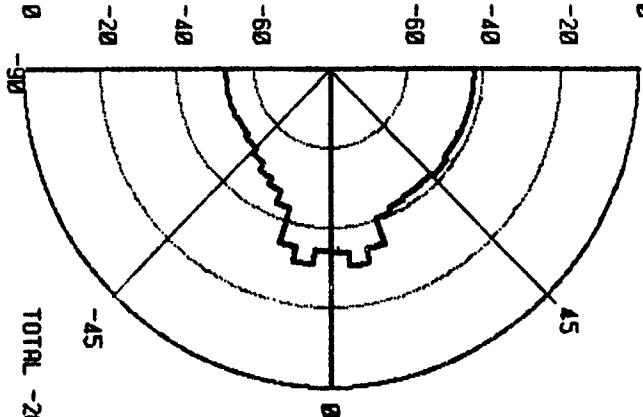
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



TOTAL -26.2 DB

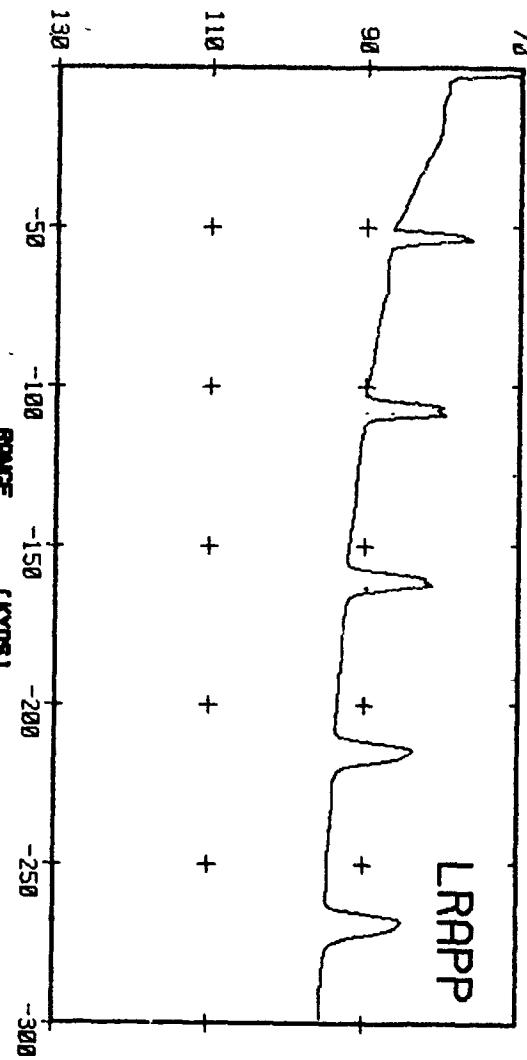
7.0

AREA 4R SUMMER

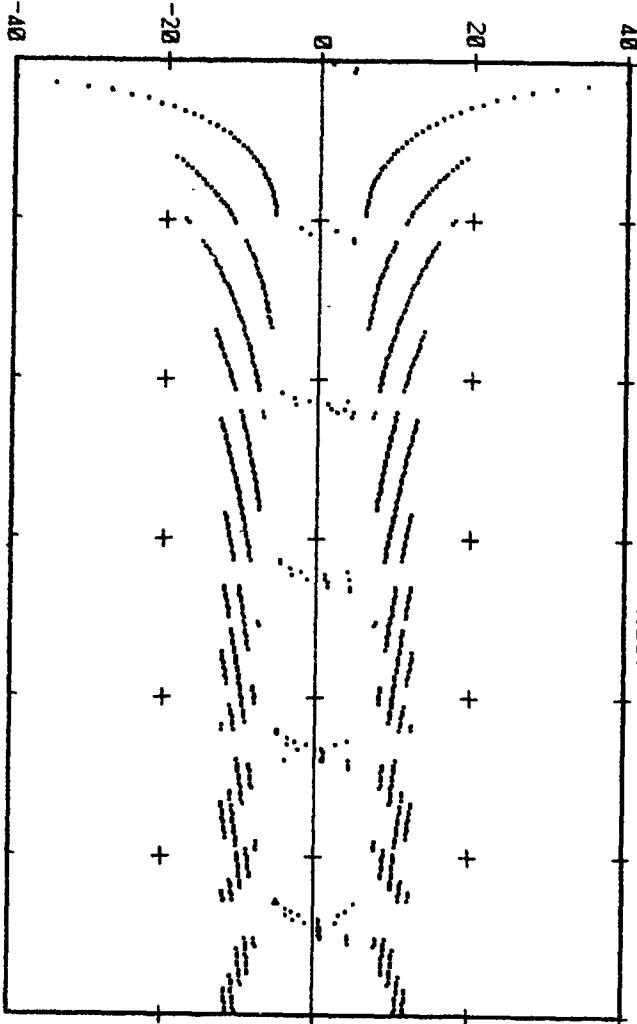
S 25.9 R 133 F 159

1450 M/S 1500 1550

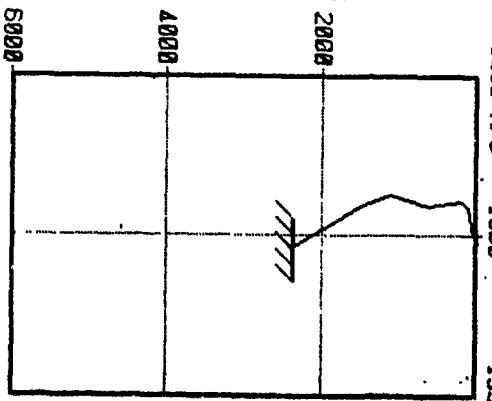
DB LOSS



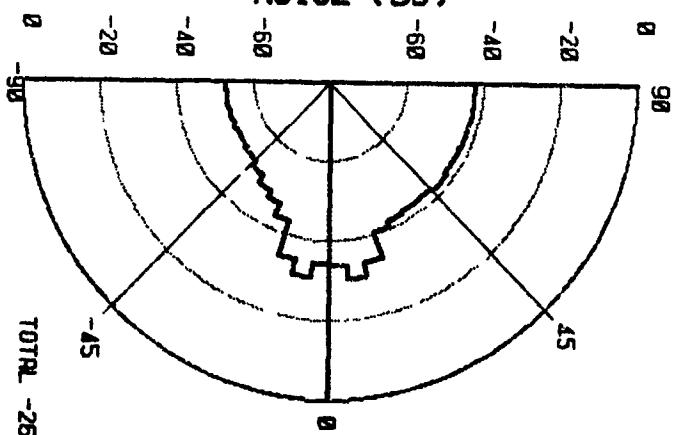
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



TOTAL -26.2 DB

7B

ARR 4R SUMMER

S 28 R 300 F 150

1450 M/S 1500 1550

DB LOSS

110

90

70

130

110

90

70

50

30

10

0

RANGE (KMS)

-50

-100

-150

-200

-250

-300

-350

-400

-450

-500

-550

-600

-650

-700

-750

-800

-850

-900

-950

-1000

-1050

-1100

-1150

-1200

-1250

-1300

-1350

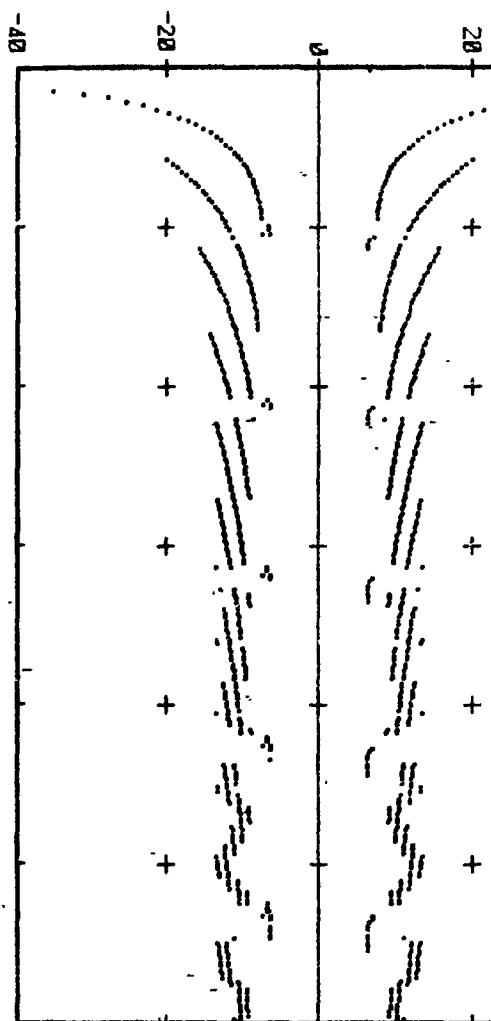
-1400

-1450

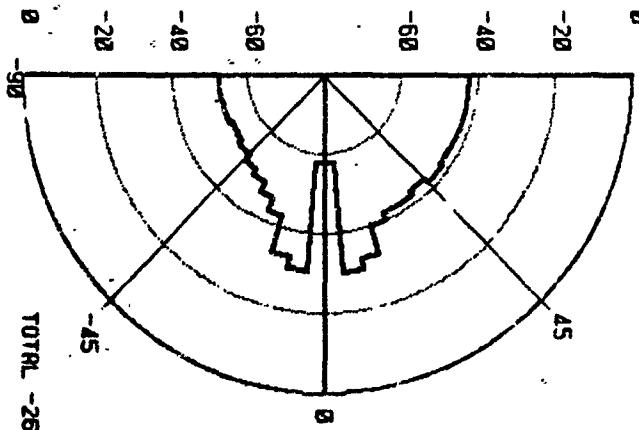
-1500

-1550

ARRIVAL ANGLE

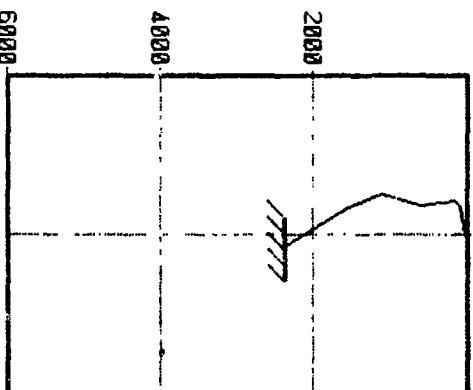


NOISE (DB)



TOTAL -25.8 DB

DEPTH IN METERS



78

AREA 4A SUMMER

S 50 R 300 F 158

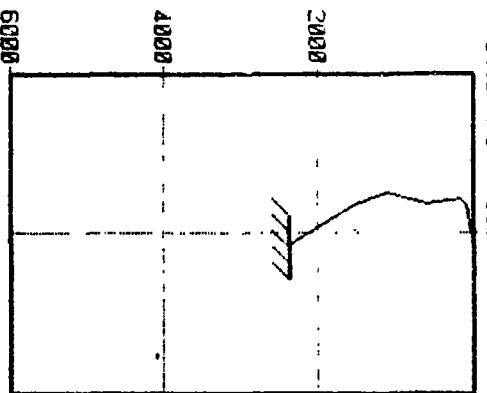
1450 M/S 1500 1550

DB LOSS

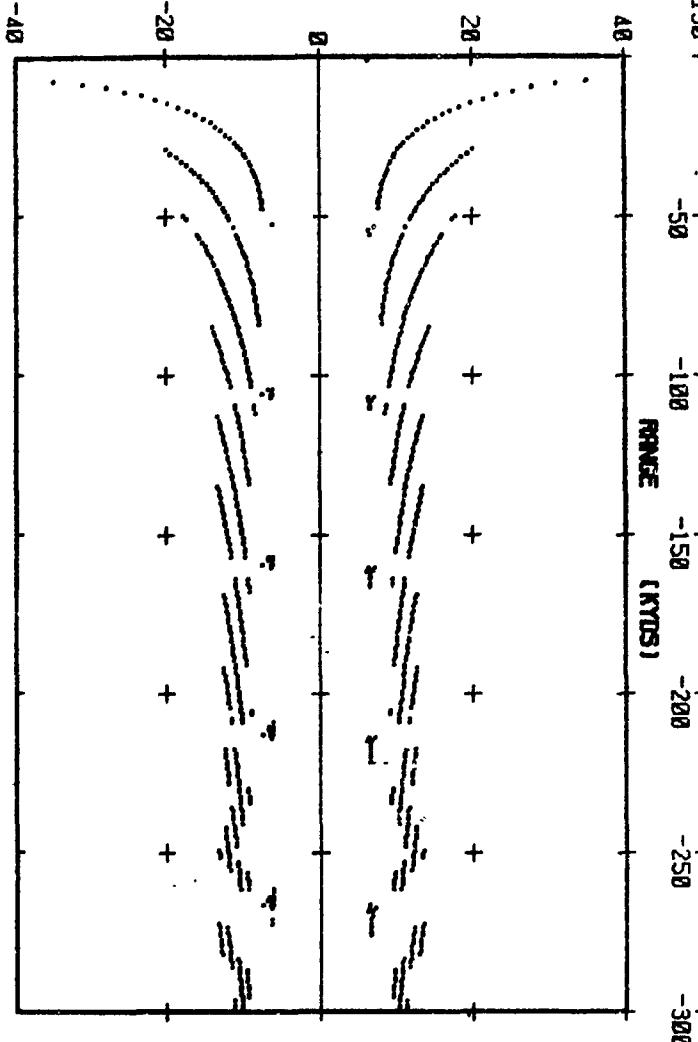


LRAPP

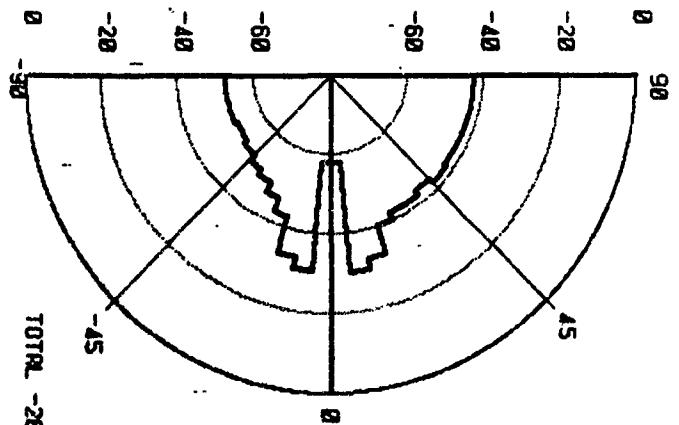
DEPTH IN METERS



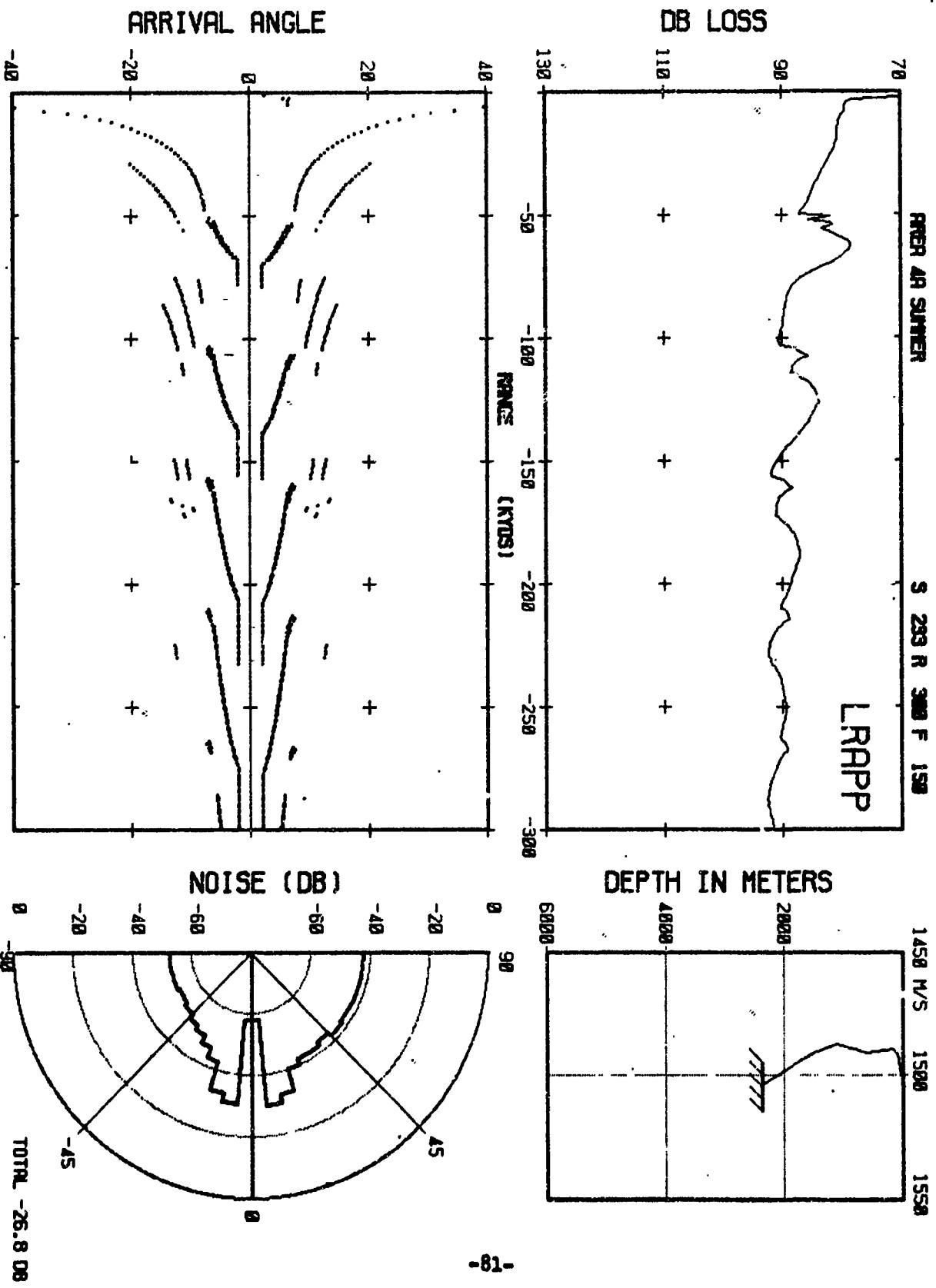
ARRIVAL ANGLE

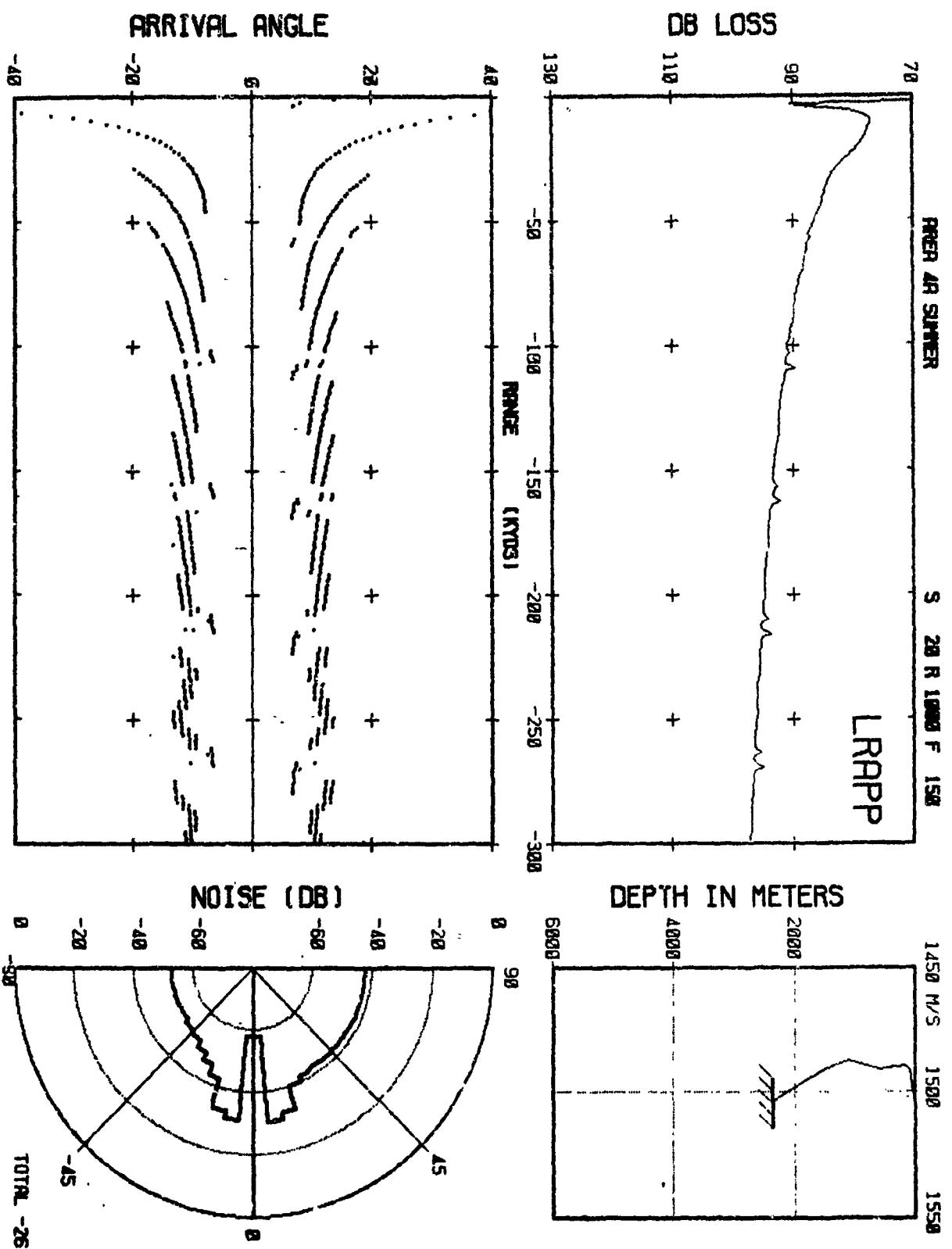


NOISE (DB)



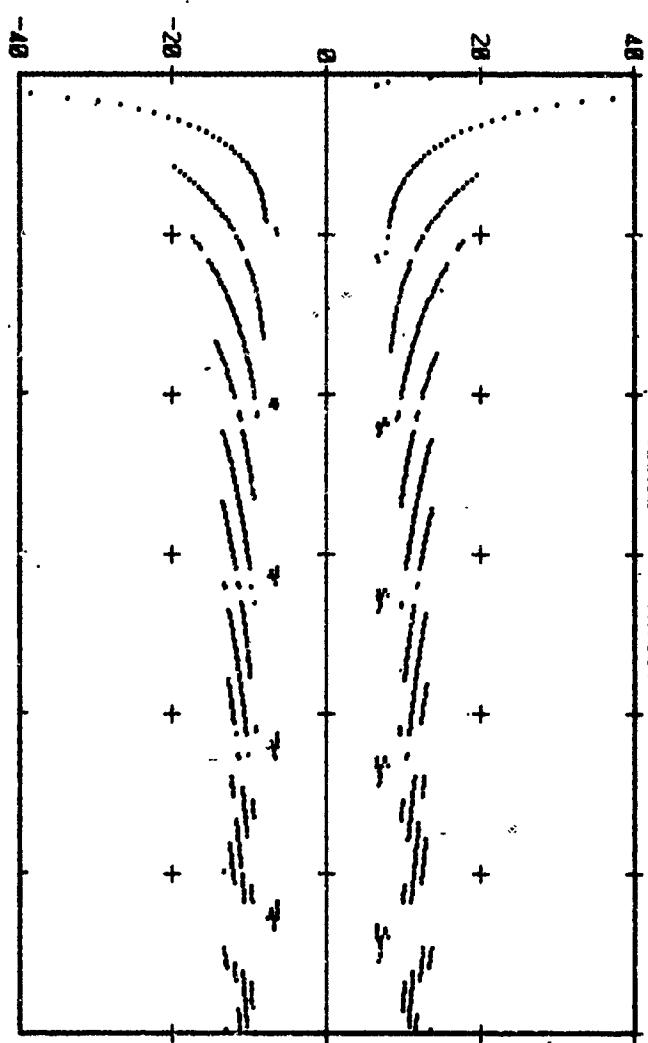
TOTAL -26.8 DB



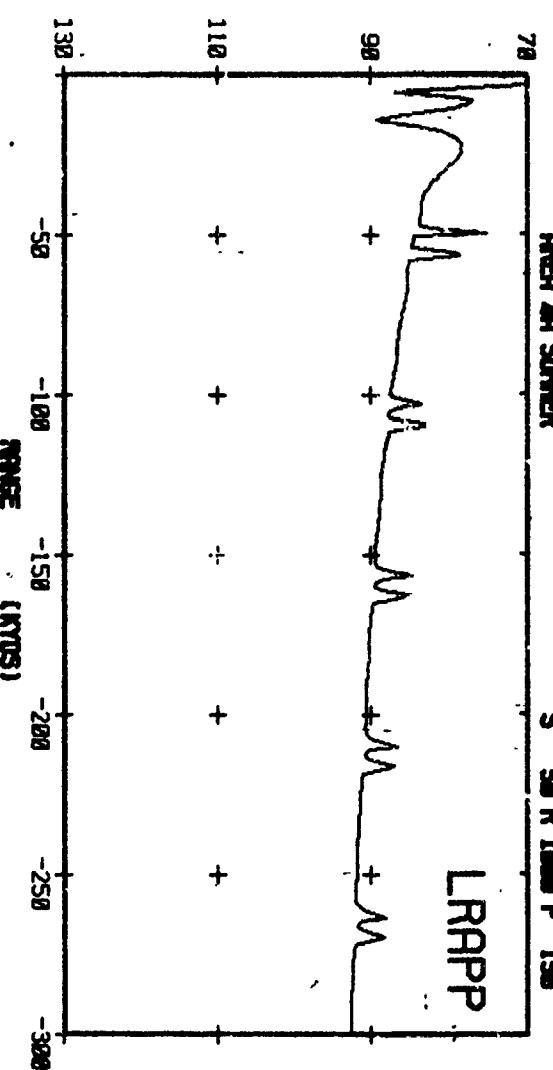


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ARRIVAL ANGLE



DB LOSS



LRAPP

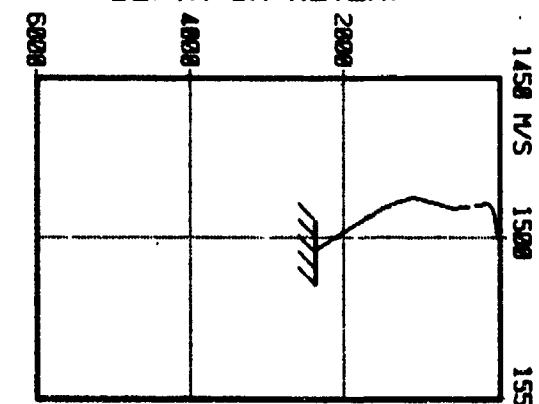
70

ATR AT SUMMER
S 50 R 100 F 150

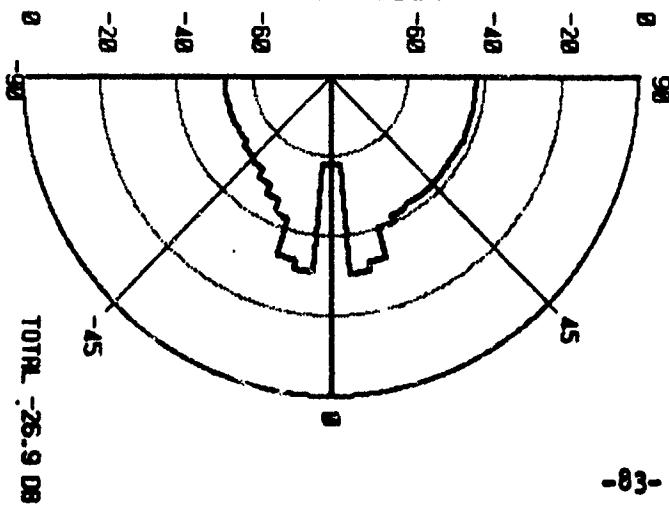
S 50 R 100 F 150

1450 M/S 1500 1550

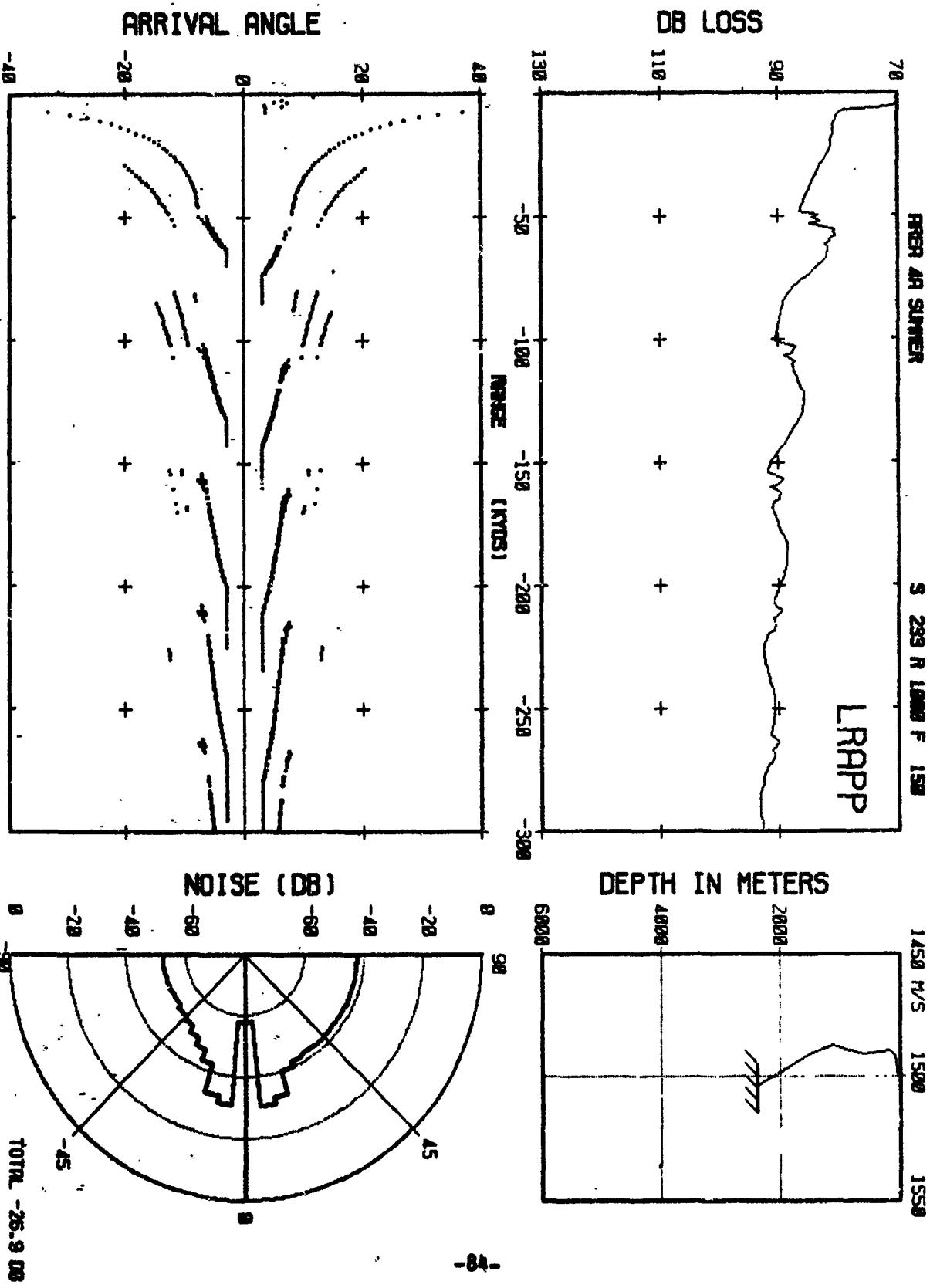
DEPTH IN METERS

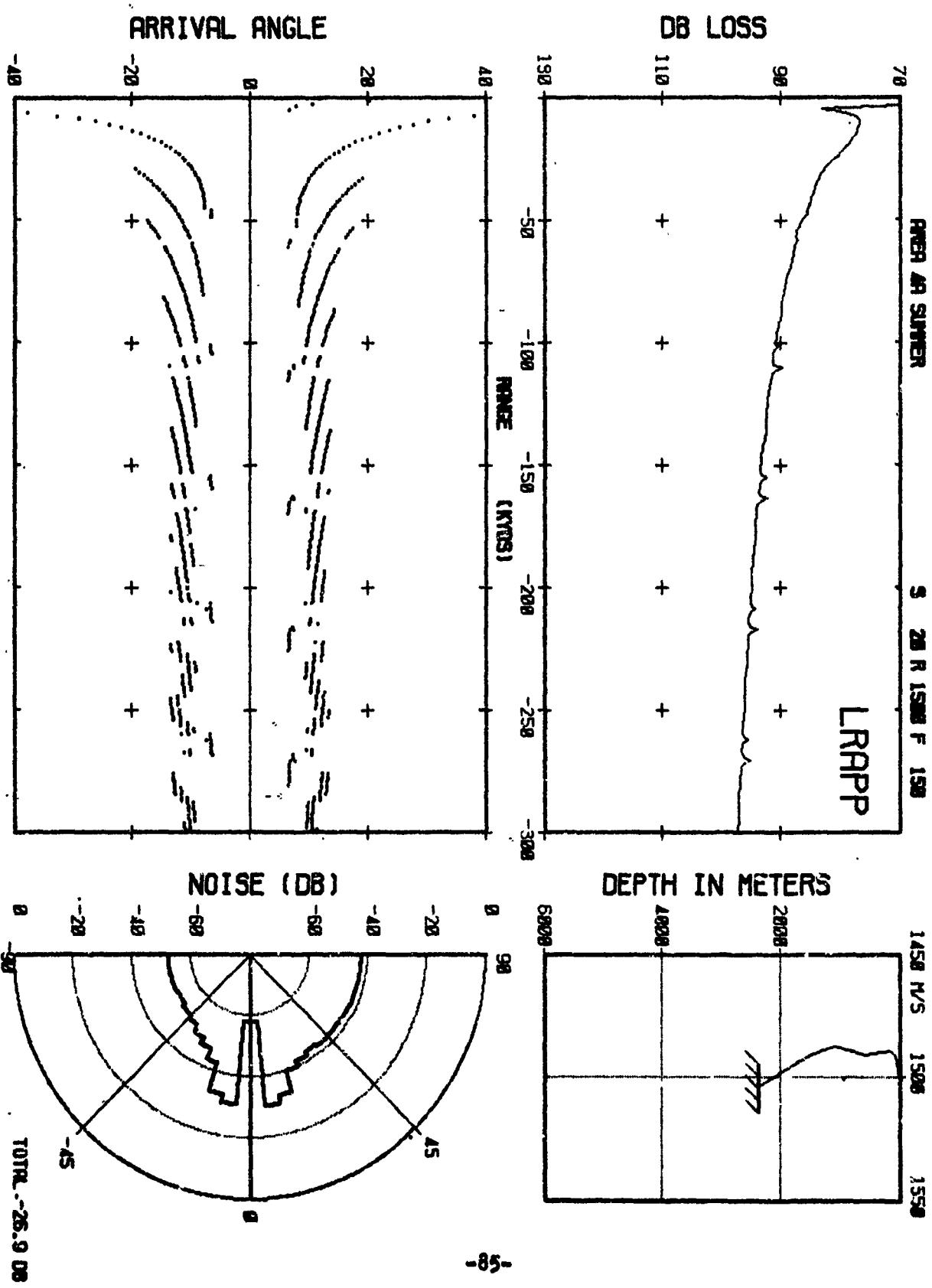


NOISE (DB)

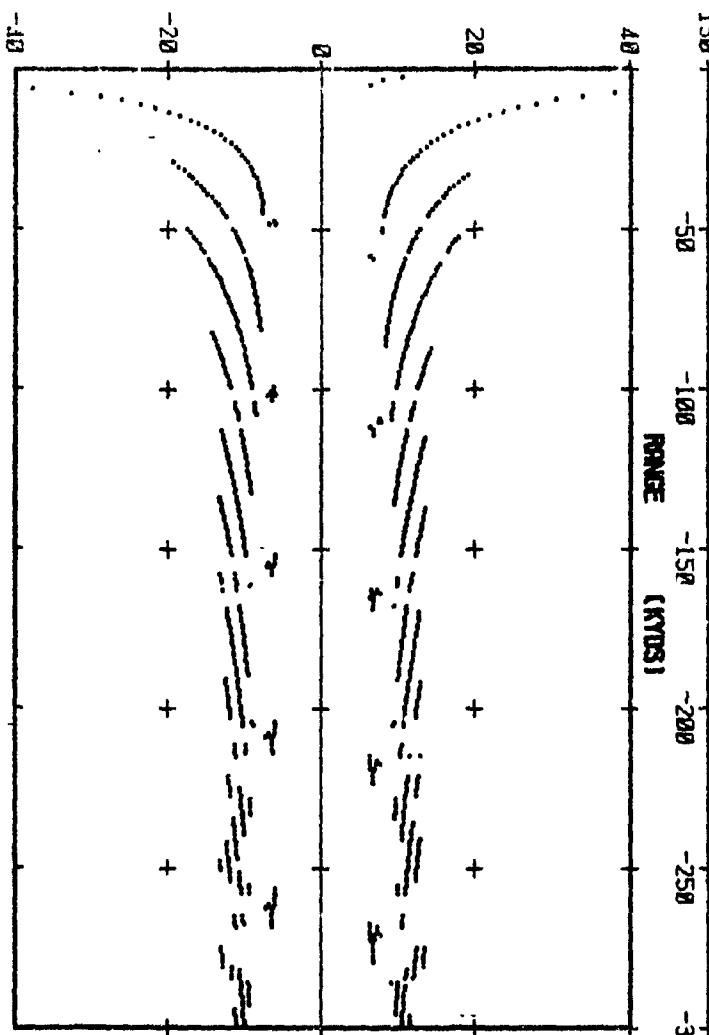


TOTAL -26.9 DB

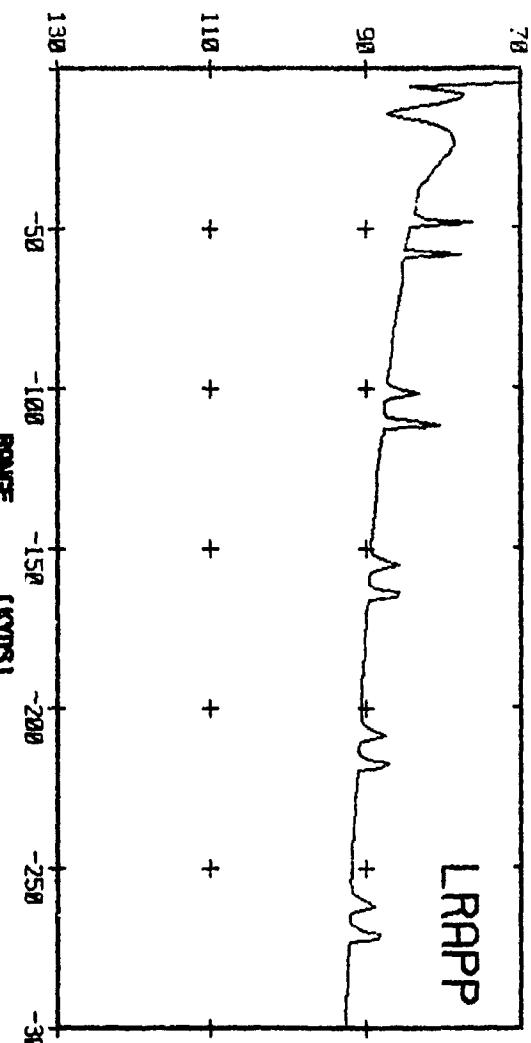




ARRIVAL ANGLE

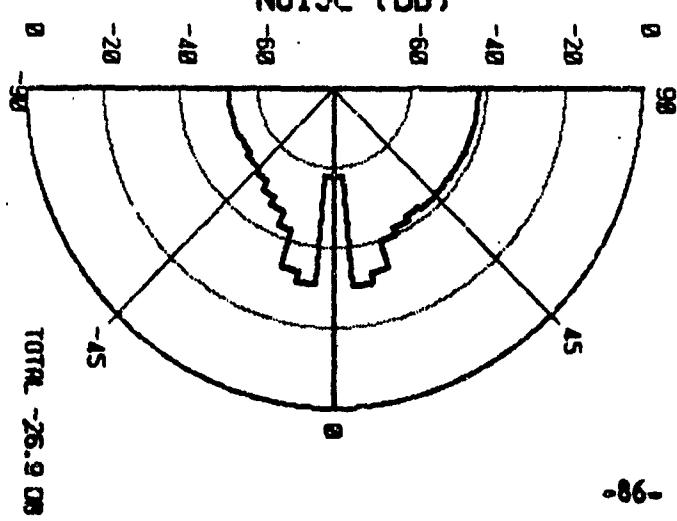


DB LOSS

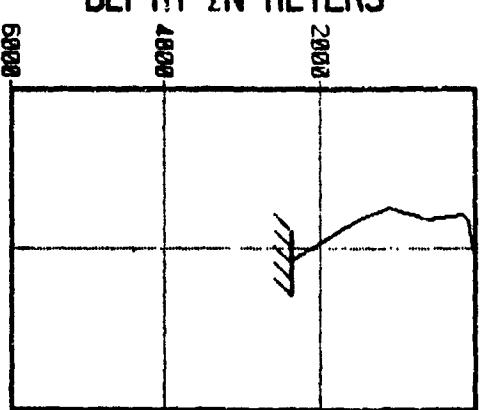


LRAPP

NOISE (DB)



DEPTH IN METERS



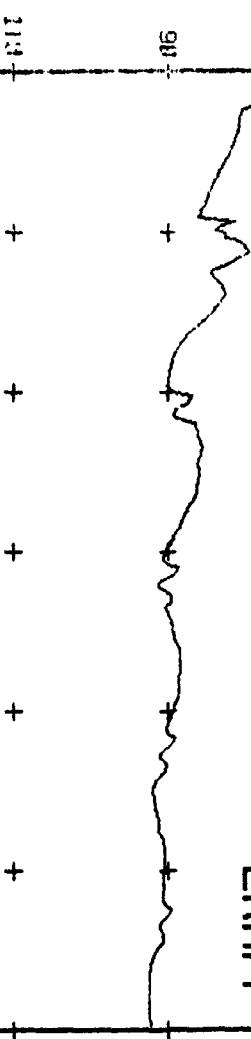
1450 M/S 1500 1550

AREA 4A SURVEY

S 239 R 1500 F 150

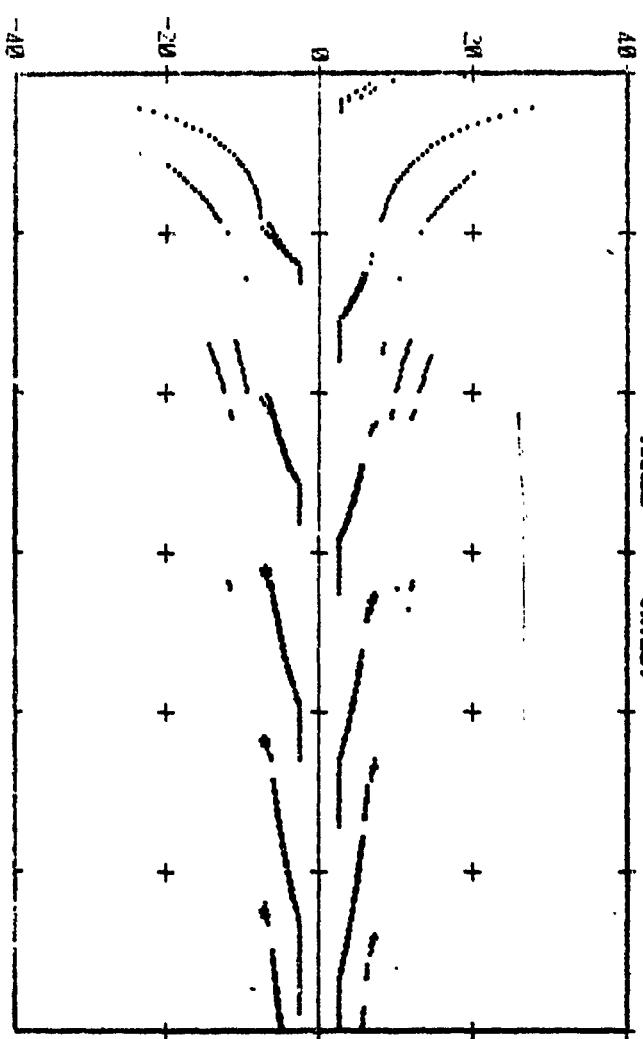
1450 m/s 1500 1550

DB LOSS

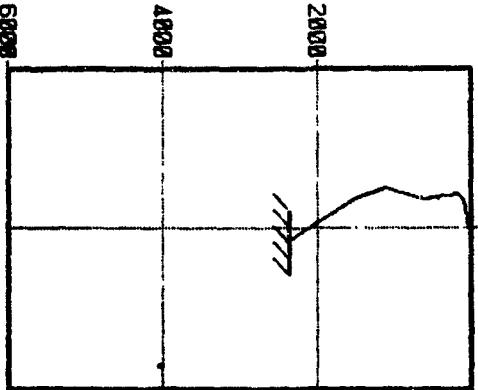


LRAPP

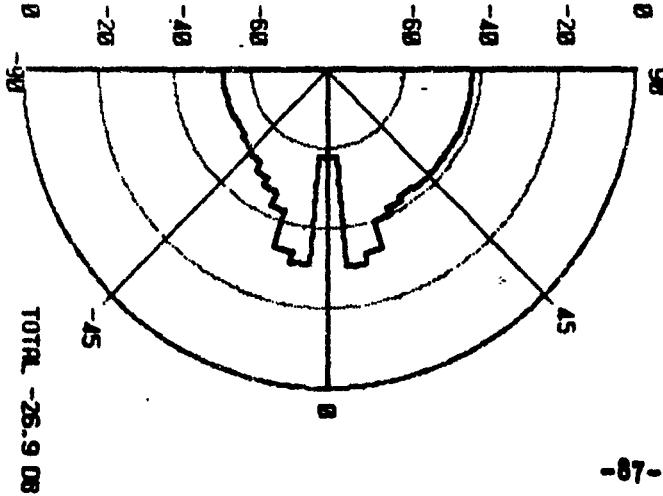
ARRIVAL ANGLE



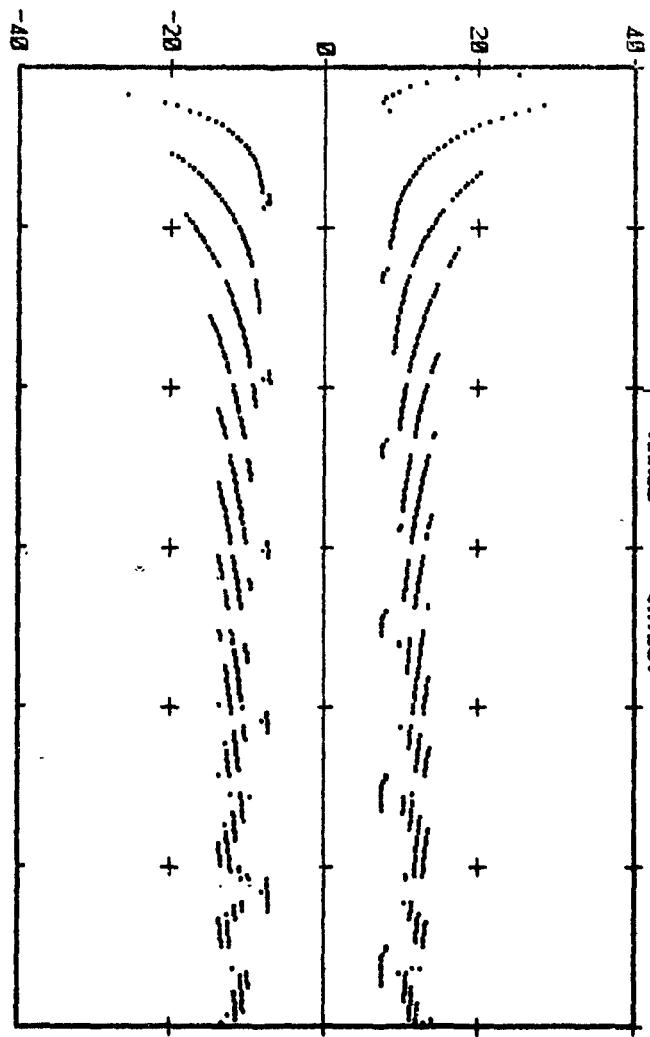
DEPTH IN METERS



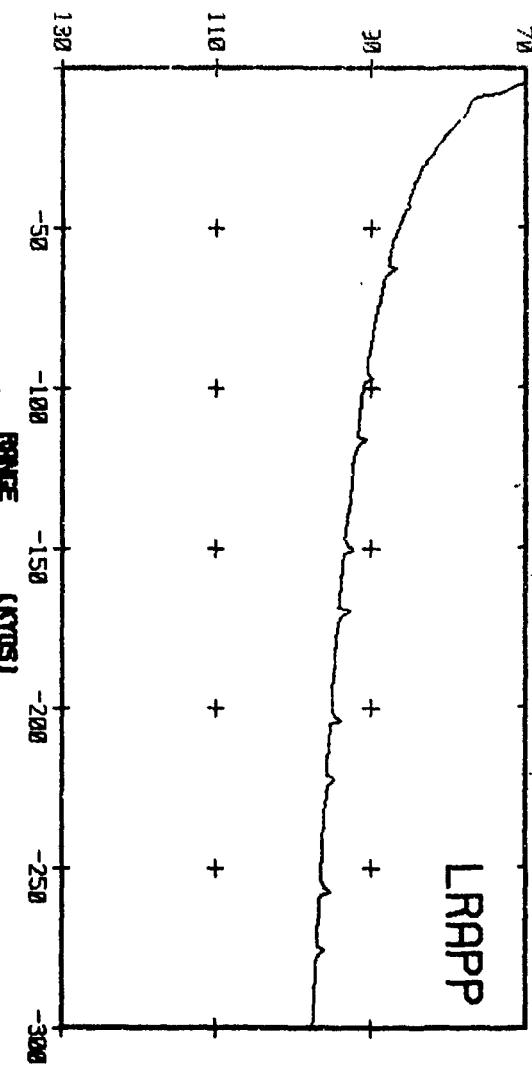
NOISE (DB)



ARRIVAL ANGLE



DB LOSS

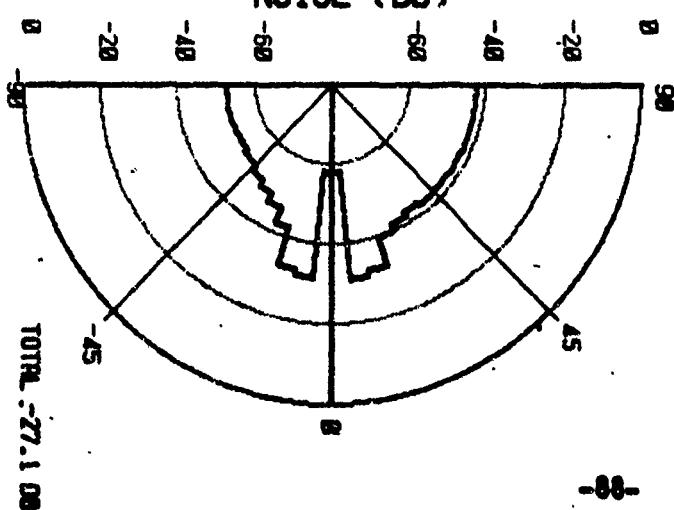


PRED AT SUMMER

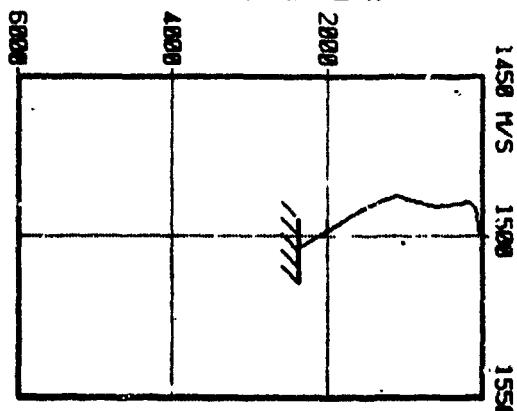
S 20 R 5W F 150

LRAPP

NOISE (DB)



DEPTH IN METERS



1450 M/S 1500

1550

TOTAL -77.1 DB

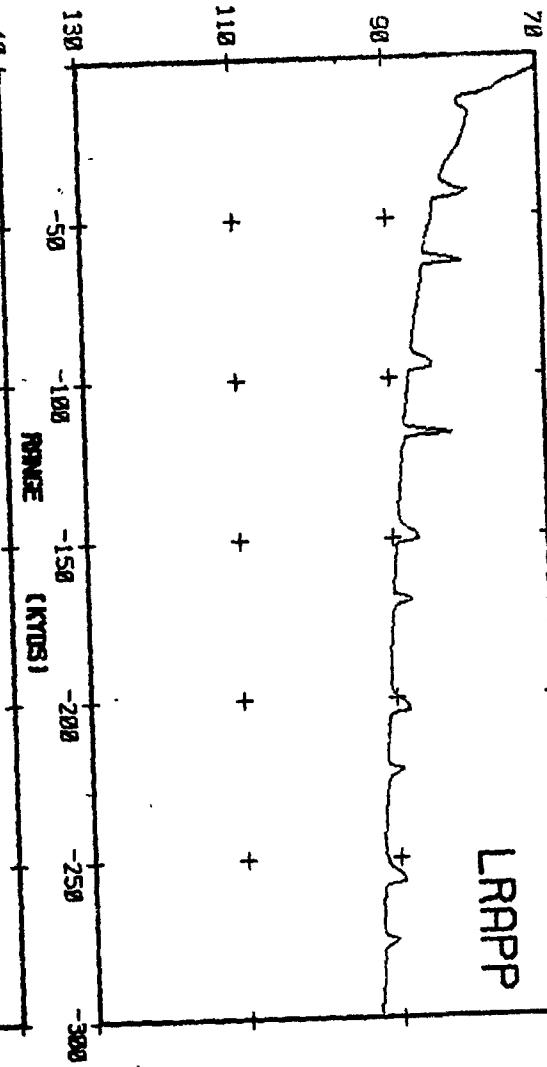
FREER AIR SISTER

S 50 R 370 F 150

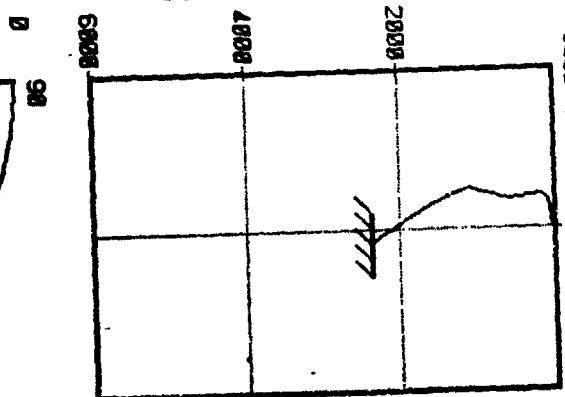
LRAPP

1450 M/S : 1550 1550

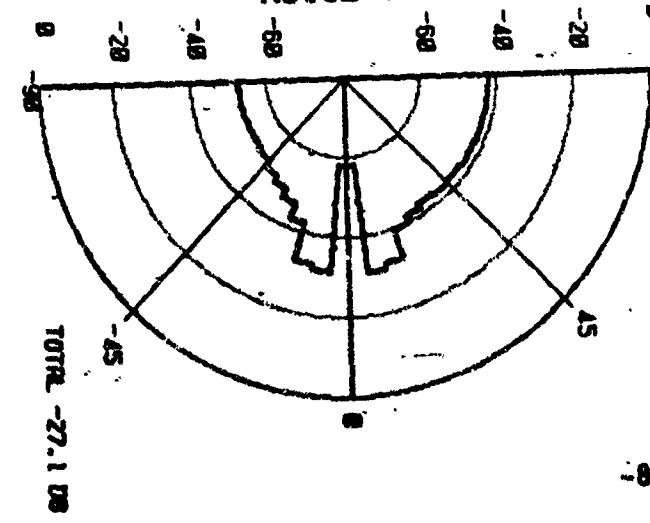
DB LOSS



DEPTH IN METERS



NOISE (DB)



70

AREA 4R SUMMER

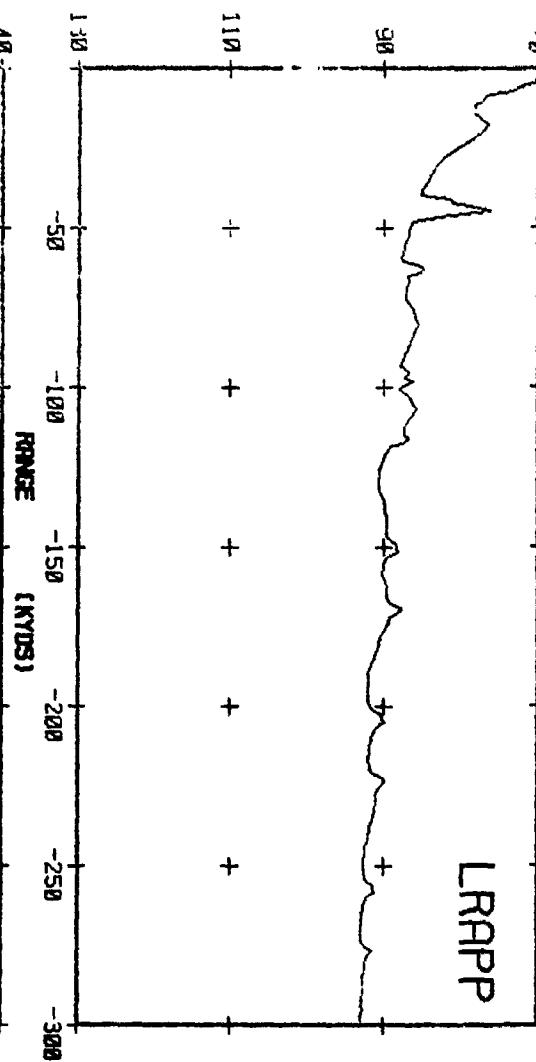
S 233 R 3767 F 150

1450 M/S

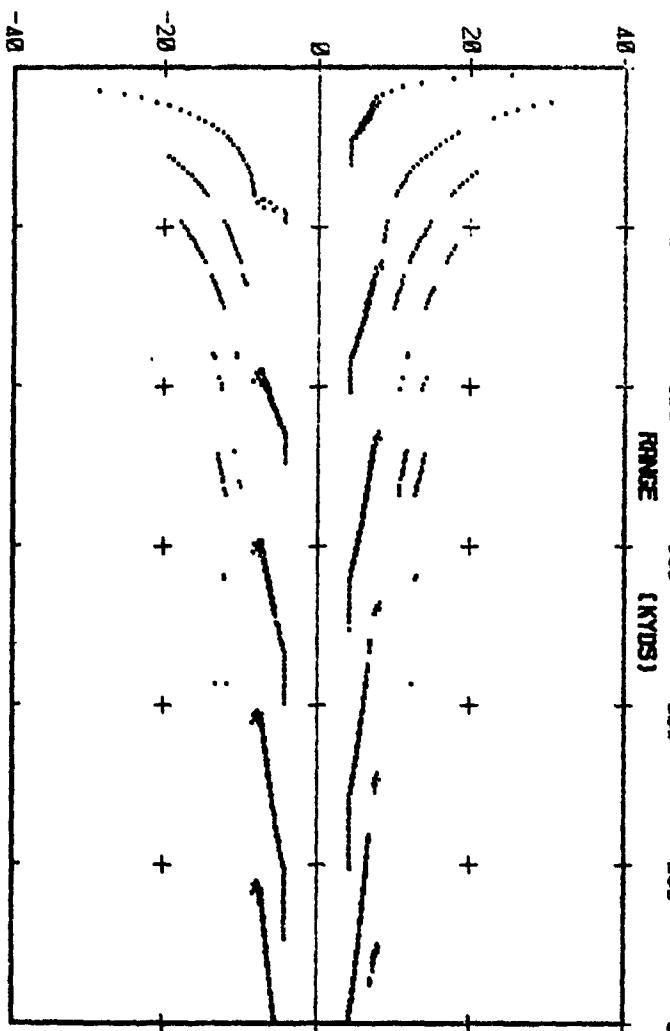
1500

1550

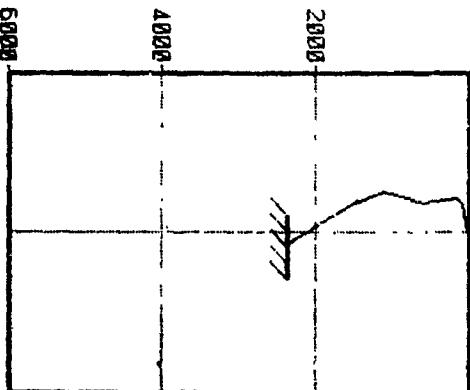
DB LOSS



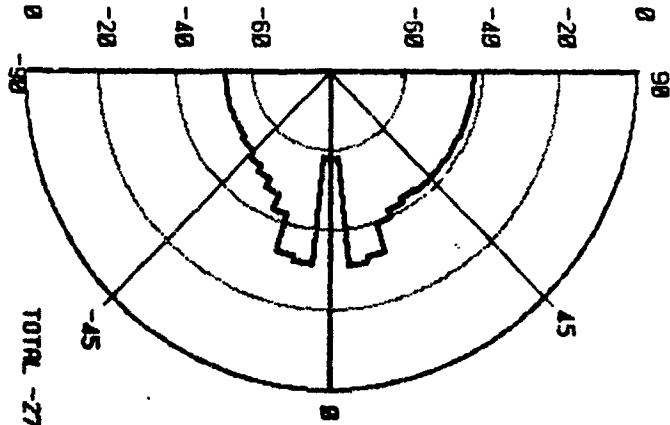
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



TOTAL -27.1 DB

70

RIVER AR SUMMER

S 28 N 6555 E 153

1458 M/S 1500 1558

90

DB LOSS

110

+

+

+

+

+

+

DEPTH IN METERS

2000

4000

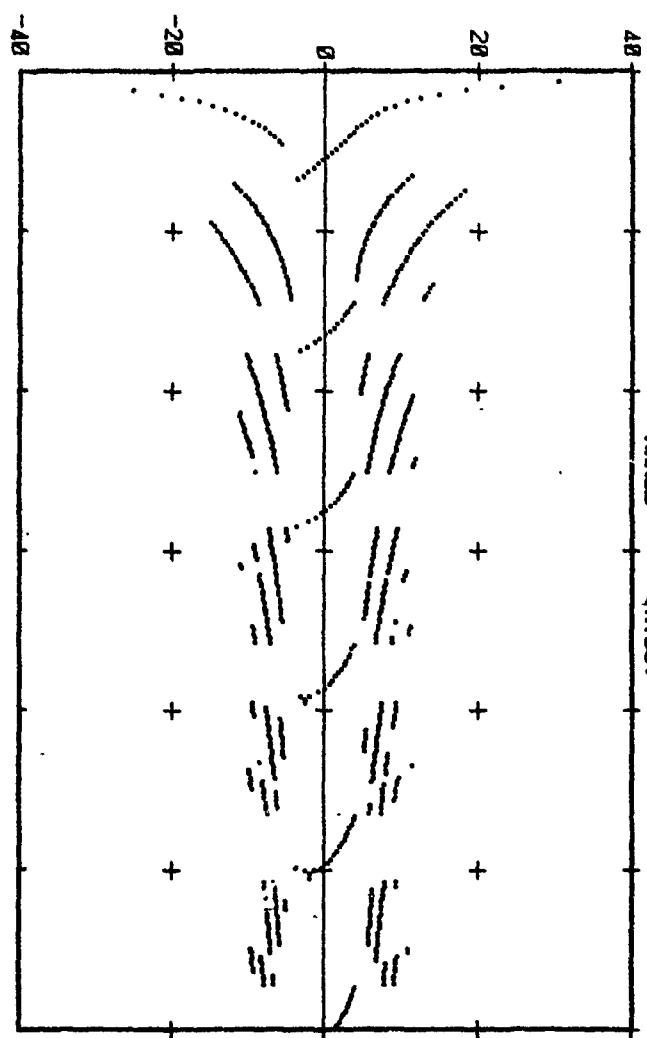
6000

8000

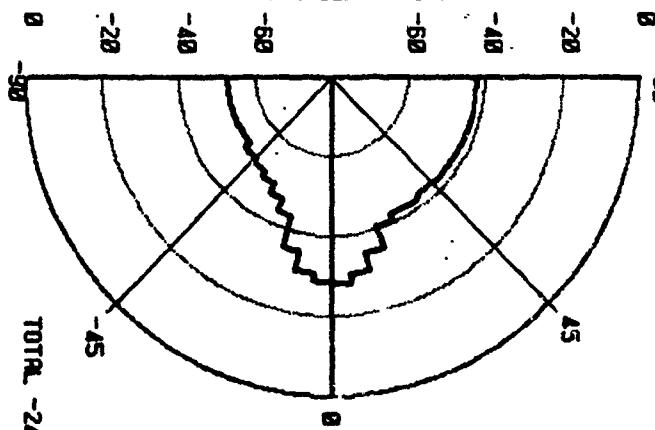
9000

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permit fully legible reproduction

ARRIVAL ANGLE

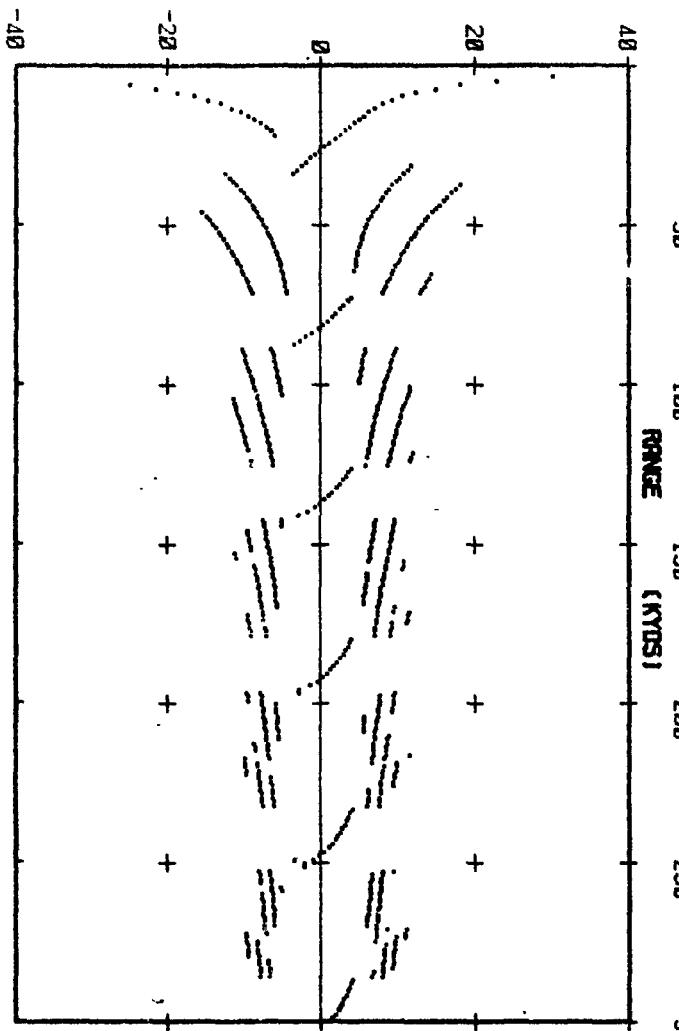


NOISE (DB)

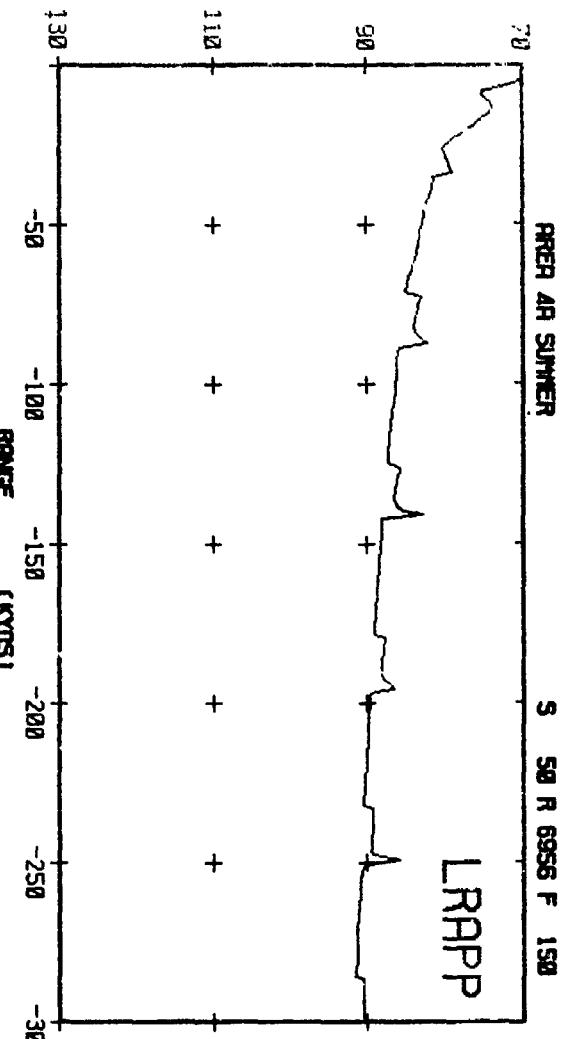


TOTAL -24.5 DB

ARRIVAL ANGLE

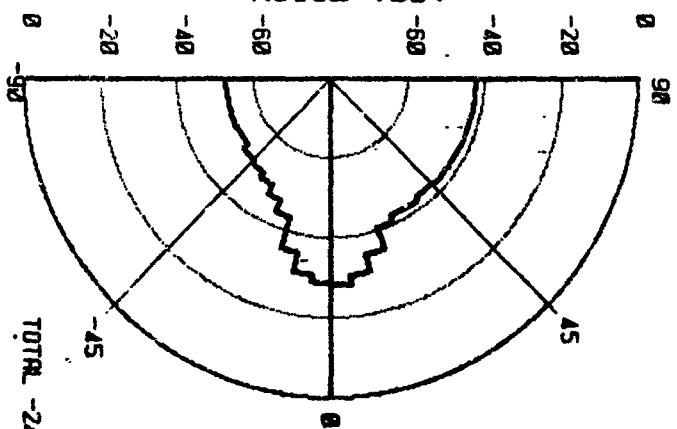


DB LOSS



LRAPP

NOISE (DB)



DEPTH IN METERS

1)

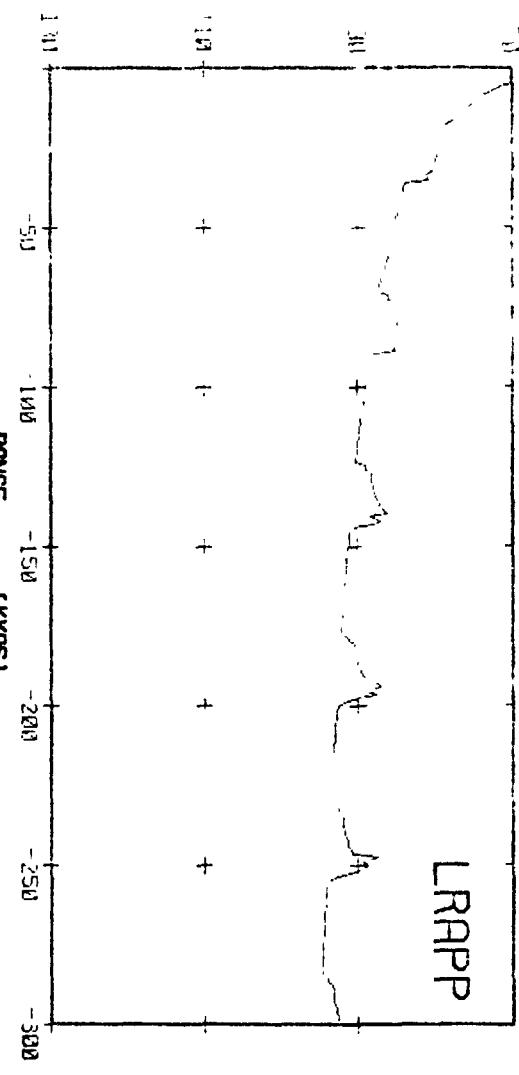
PREF 4A SUMMER

S 233 R 6958 F 150

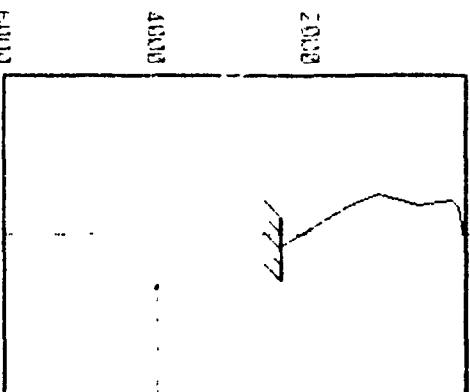
1450 m/s 1500 1550

LRAAPP

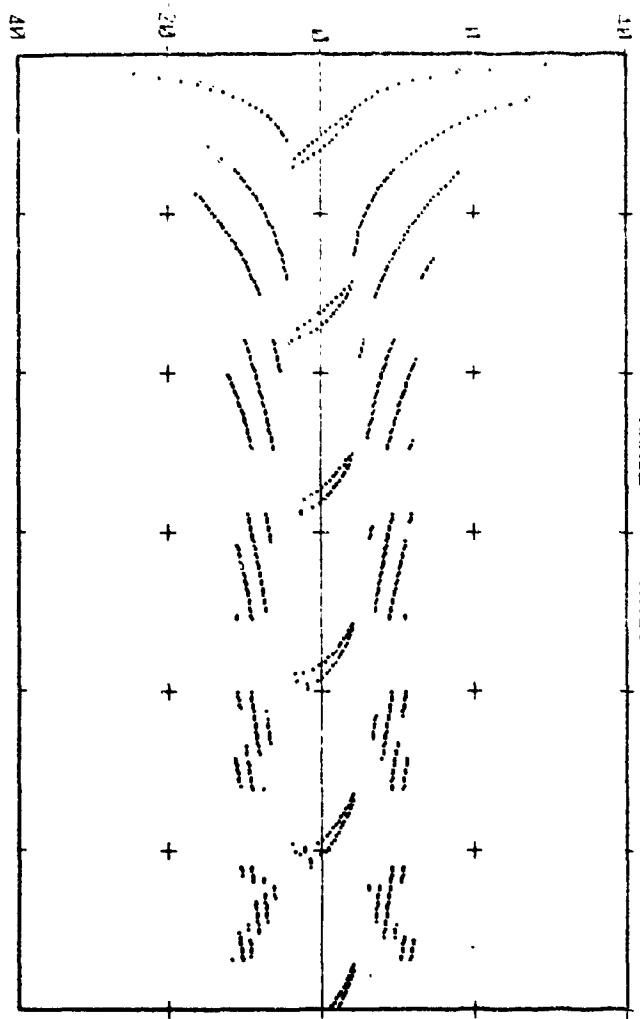
DB LOSS



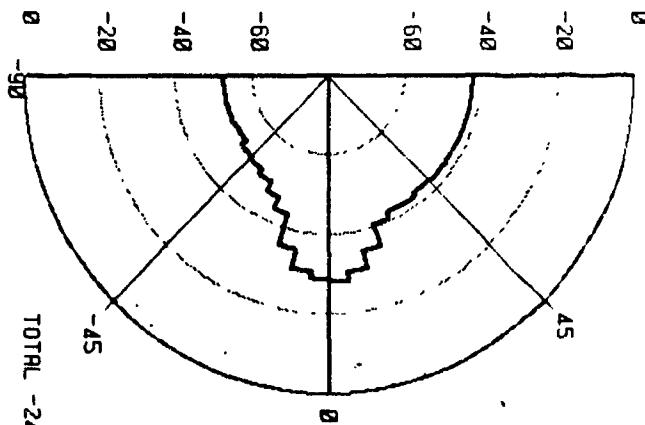
DEPTH IN METERS



ARRIVAL ANGLE

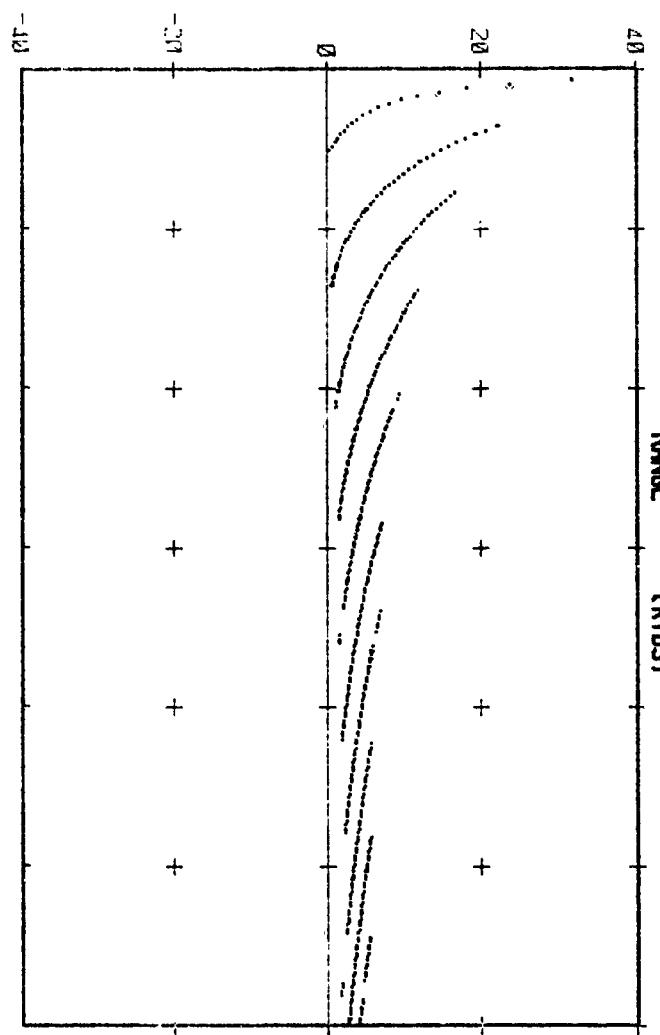


NOISE (DB)

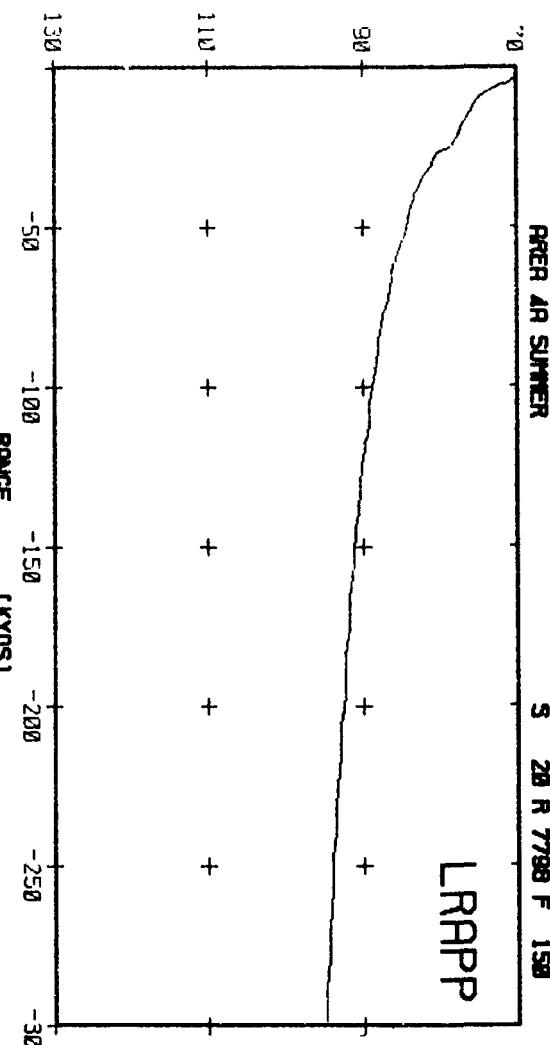


TOTAL -24.5 DB

ARRIVAL ANGLE



DB LOSS

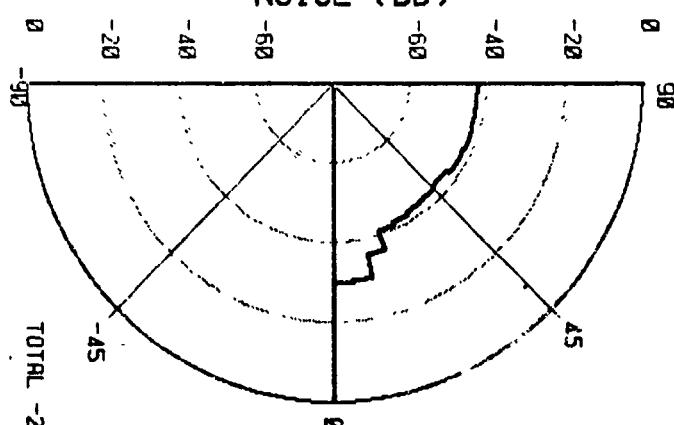


L RAPP

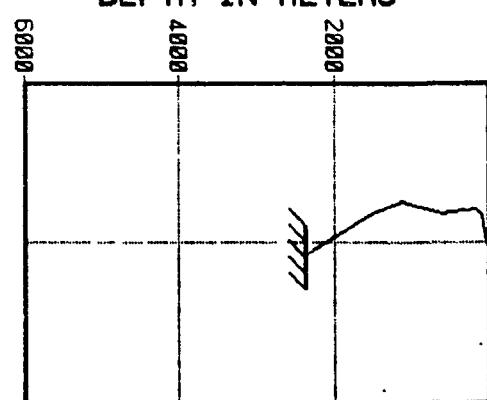
RER 4R SUMMER S 28 R 7798 F 150

1450 M/S 1500 1550

NOISE (DB)



DEPTH IN METERS



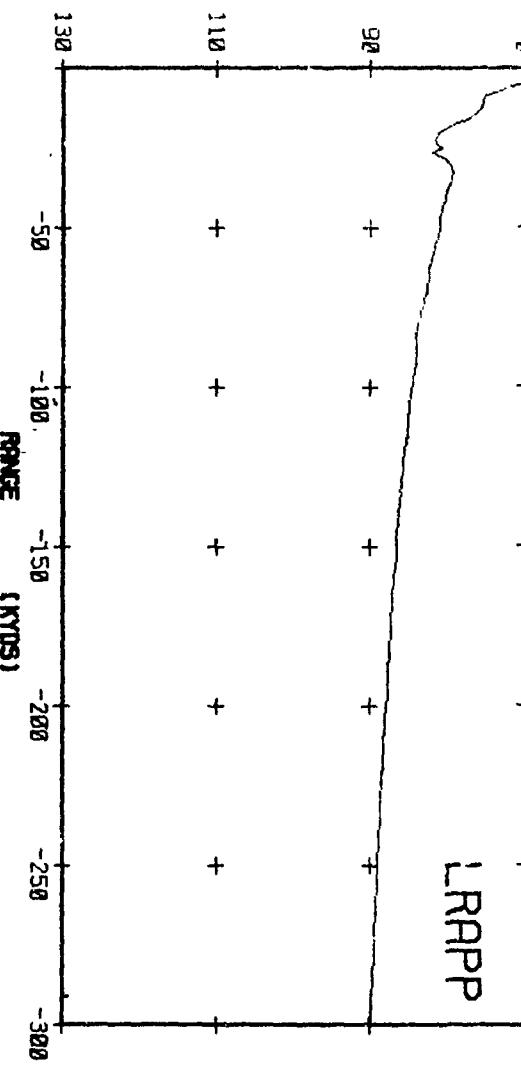
TOTAL -27.8 DB

ARR 4R SUMMER

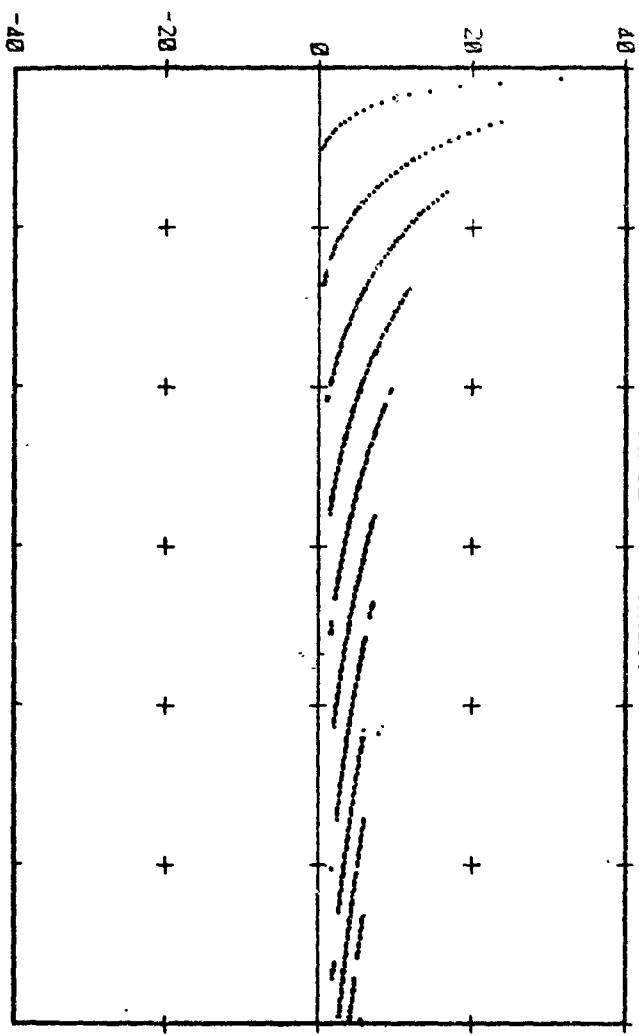
S 59 R 7788 F 150

1450 M/S 1500 1550

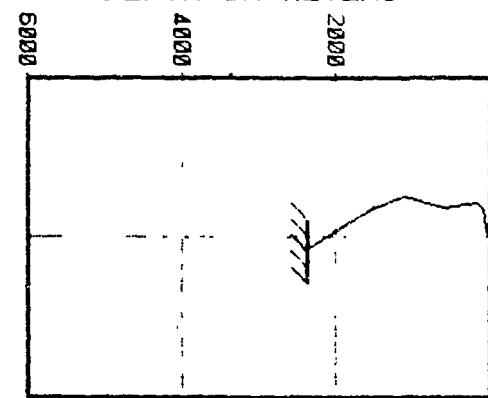
DB LOSS



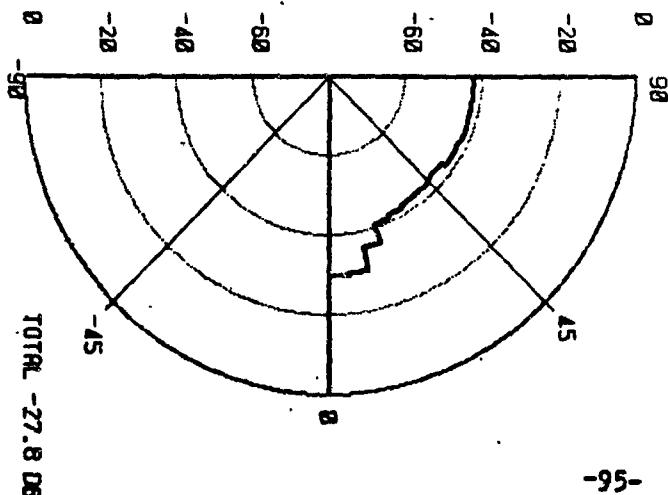
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



70

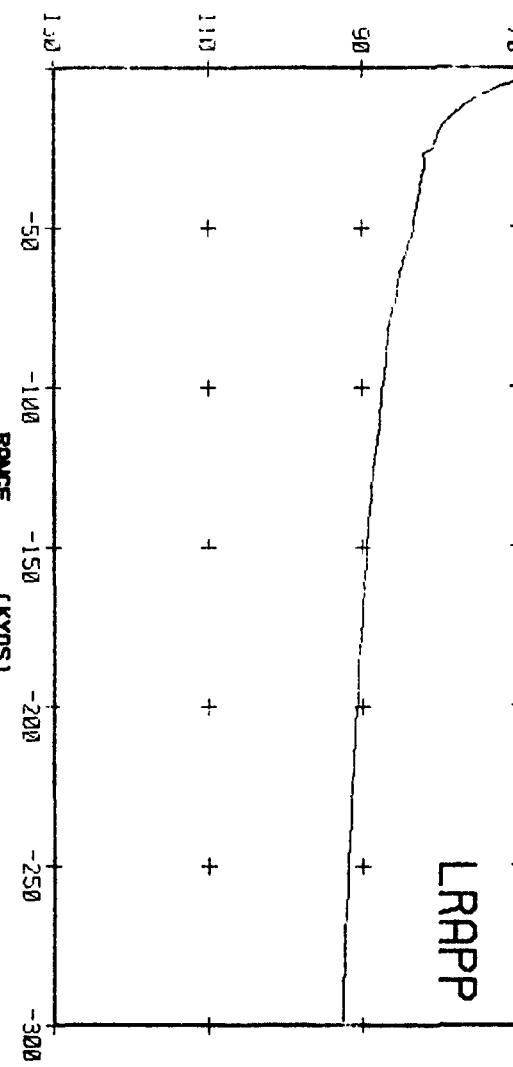
AREA 4A SUMMER

S 233 R 7768 F 150

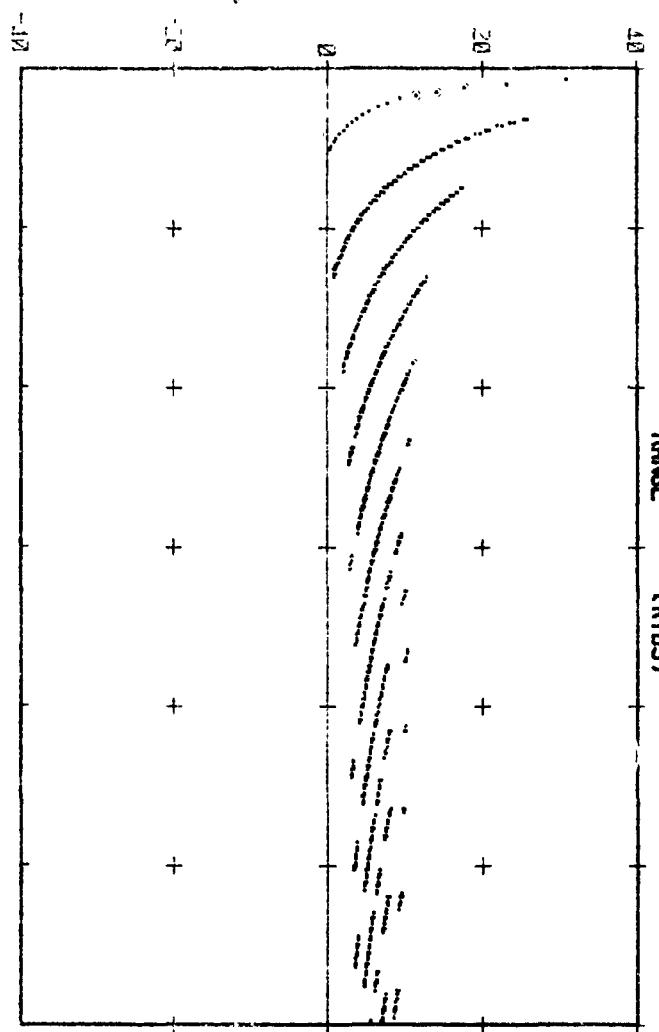
1450 M/S 1500 1550

LRAPP

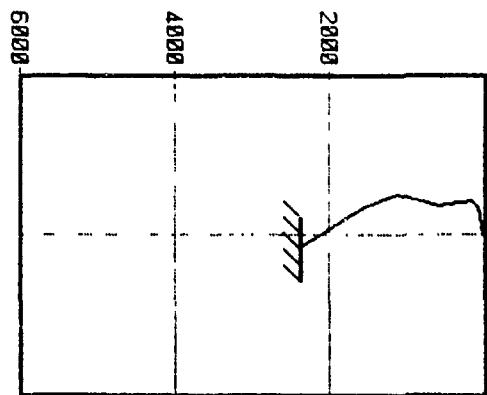
DB LOSS



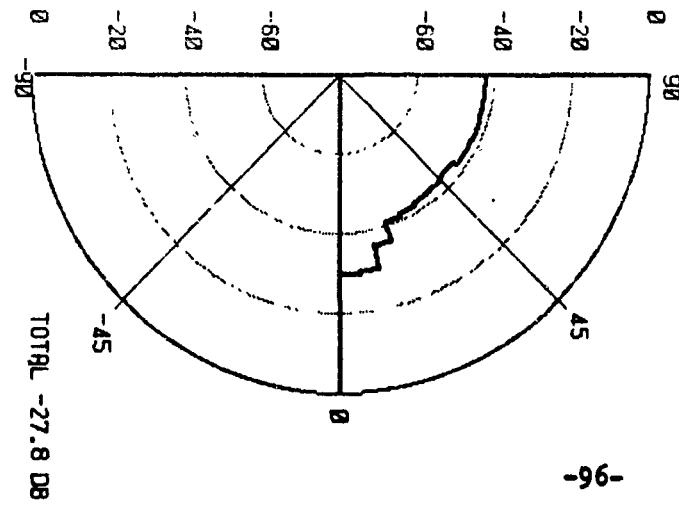
ARRIVAL ANGLE



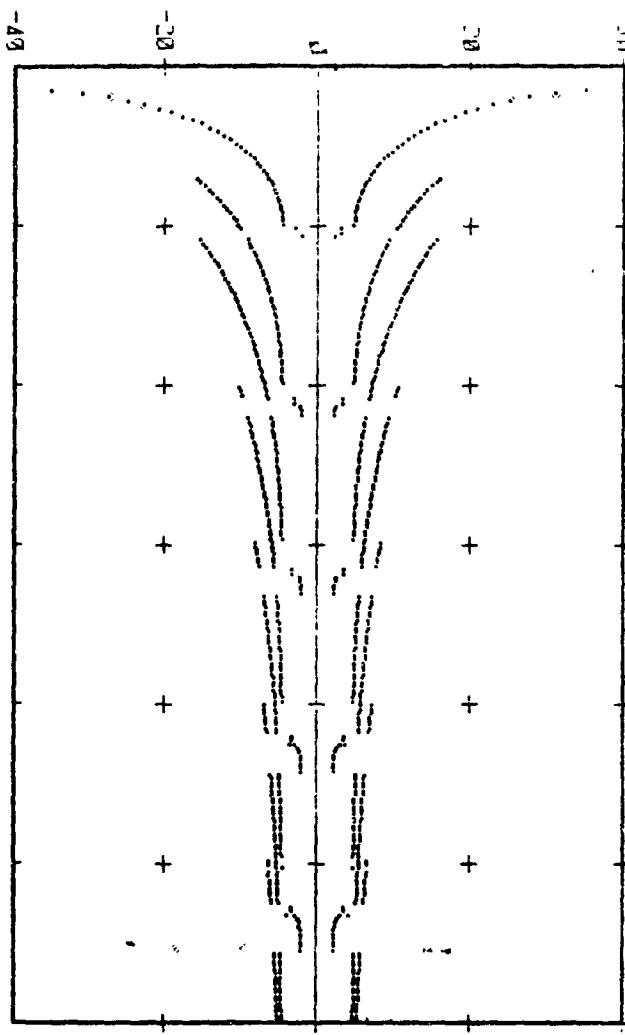
DEPTH IN METERS



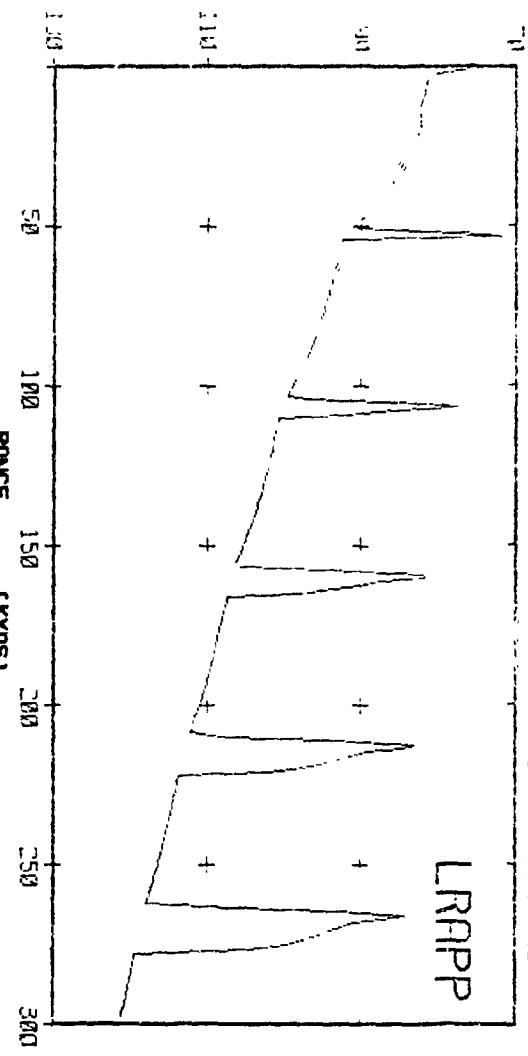
NOISE (DB)



ARRIVAL ANGLE

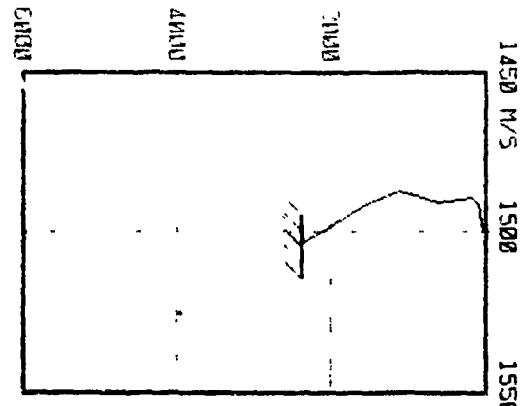


DB LOSS



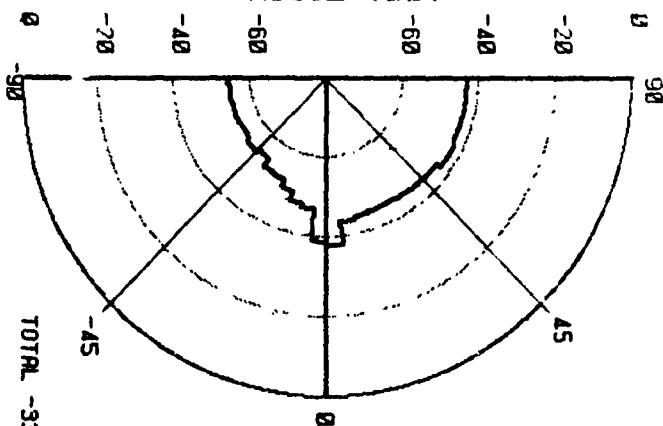
LRAAPP

DEPTH IN METERS



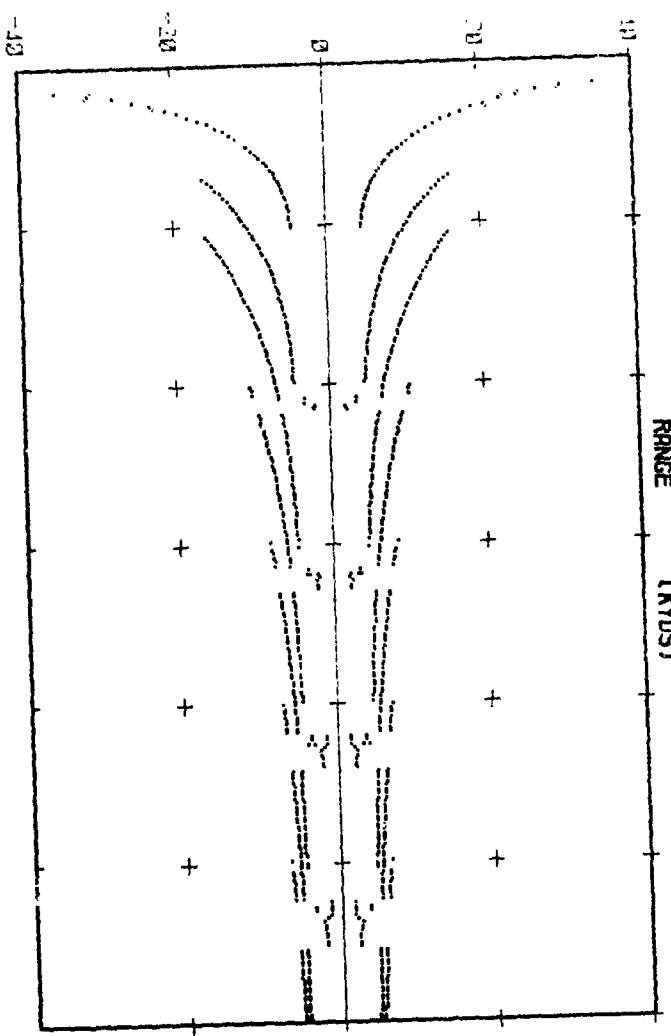
1450 M/S 1500 1550

NOISE (DB)

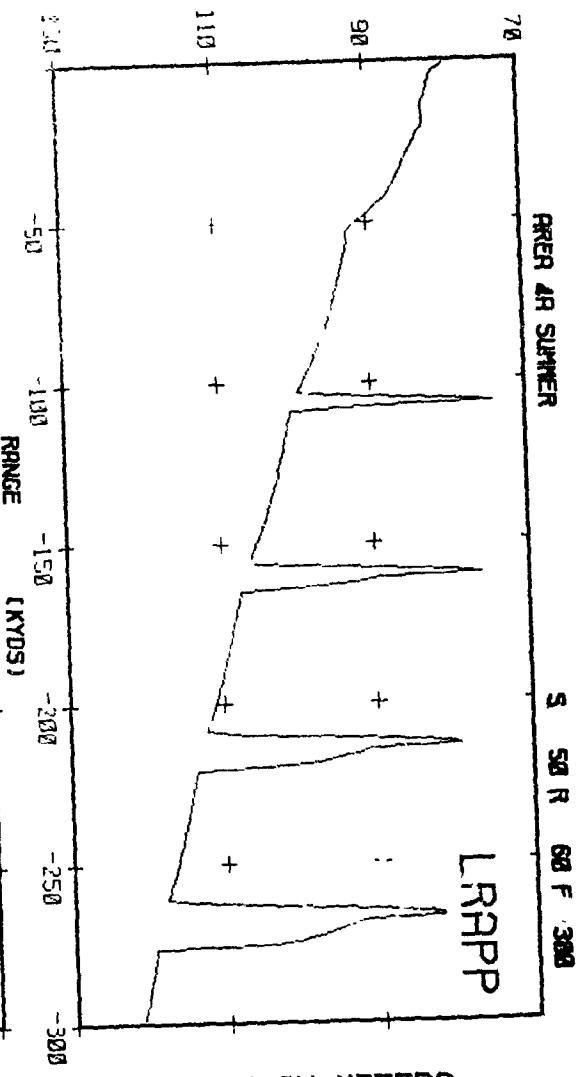


TOTAL -33.5 DB

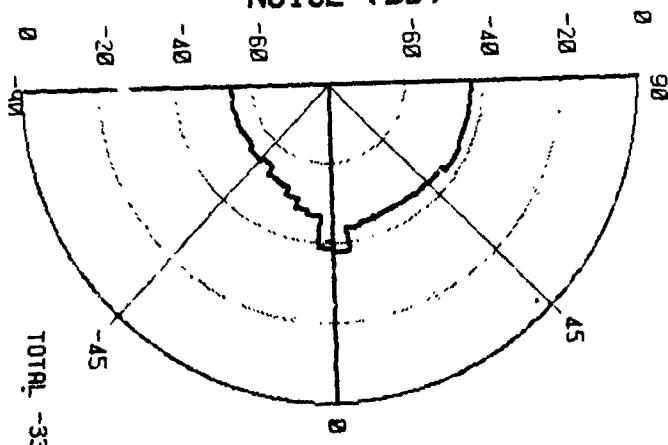
ARRIVAL ANGLE



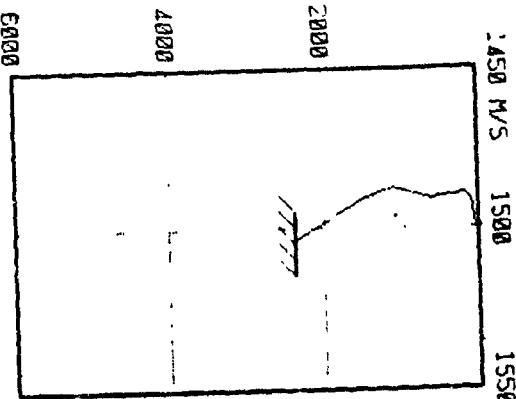
DB LOSS



NOISE (DB)



DEPTH IN METERS



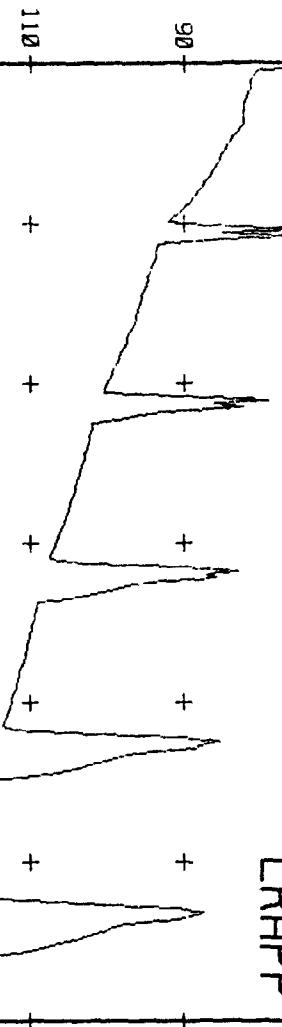
AREA 4A SUMMER

S 233 R 69 F 389

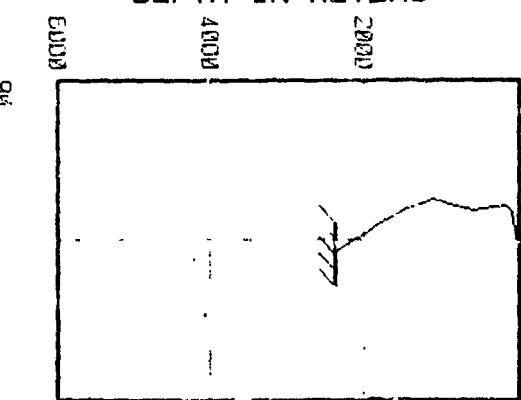
1450 M/S 1500 1550

LRAPP

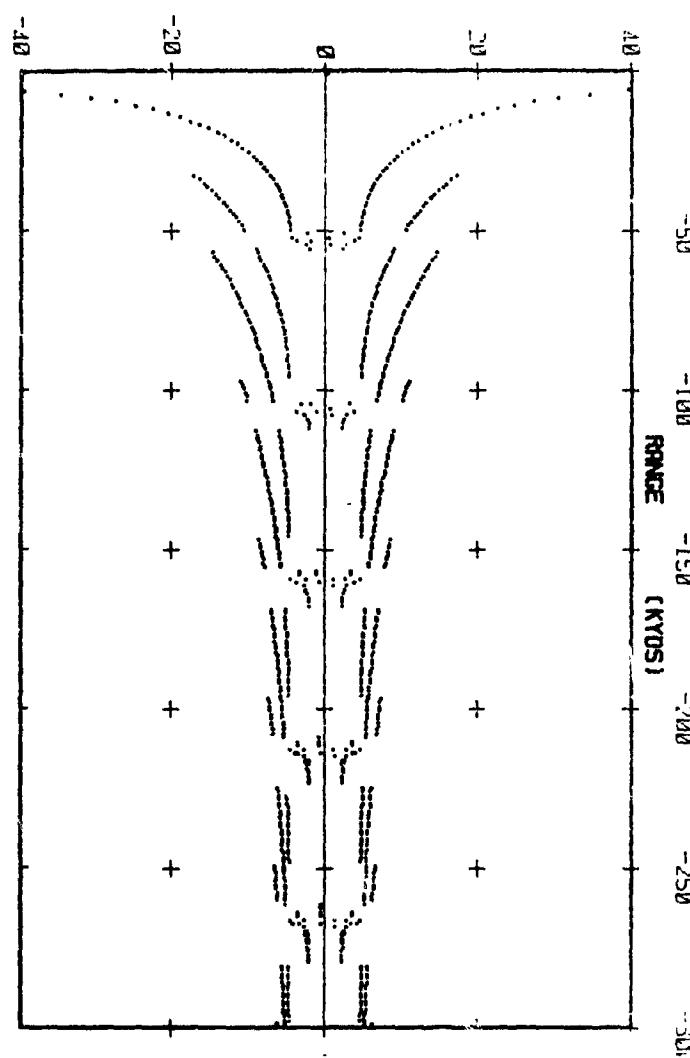
DB LOSS



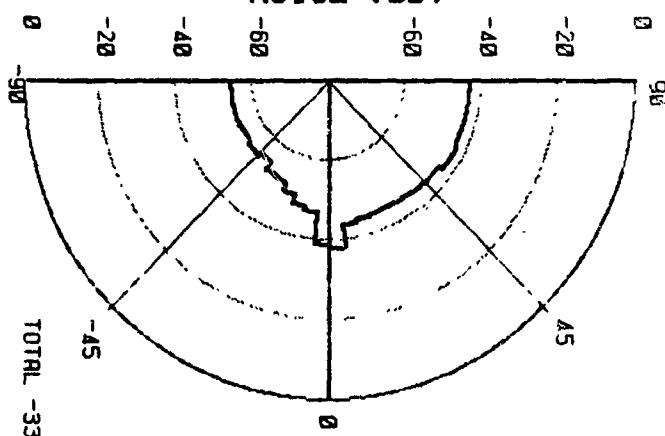
DEPTH IN METERS



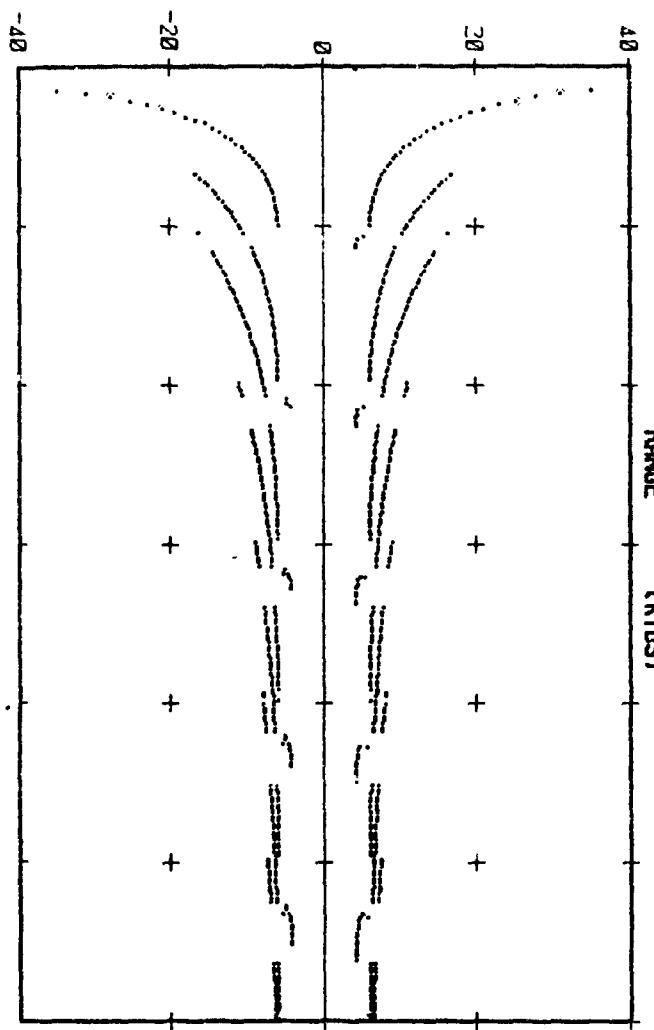
ARRIVAL ANGLE



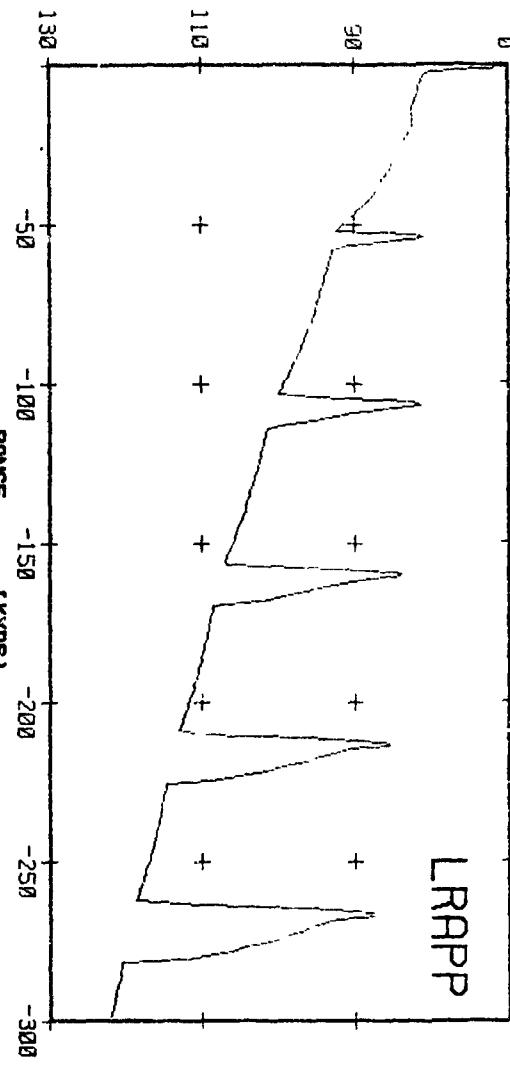
NOISE (DB)



ARRIVAL ANGLE



DB LOSS



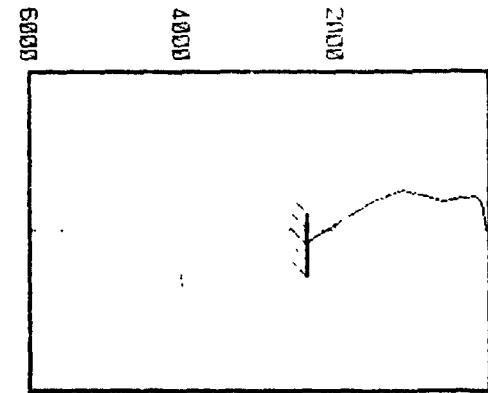
AREA 4A SUMMER

S 20 R 133 F 300

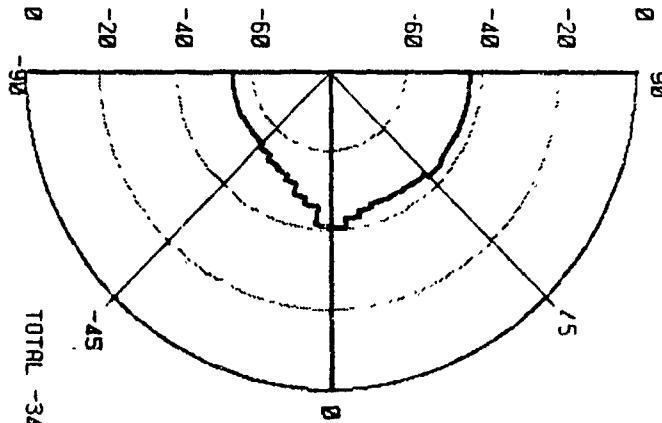
LRAFP

1450 H/S 150E 1550

DEPTH IN METERS



NOISE (DB)



TOTAL -34.3 DB

78

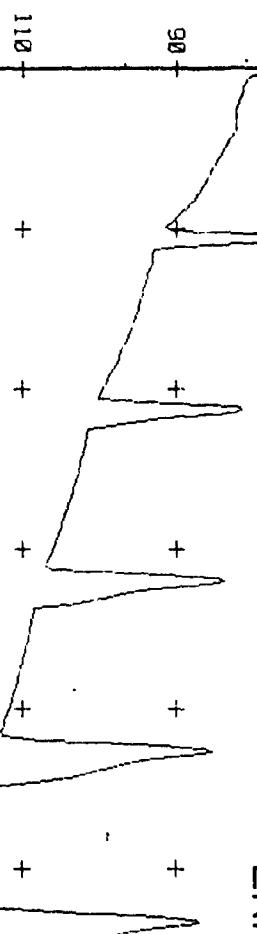
AFTER 4R SUMMER

S 50 R 133 F 382

1450 M/S 1500 1550

LRAPP

DB LOSS



DEPTH IN METERS

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6000

8000

10000

12000

14000

16000

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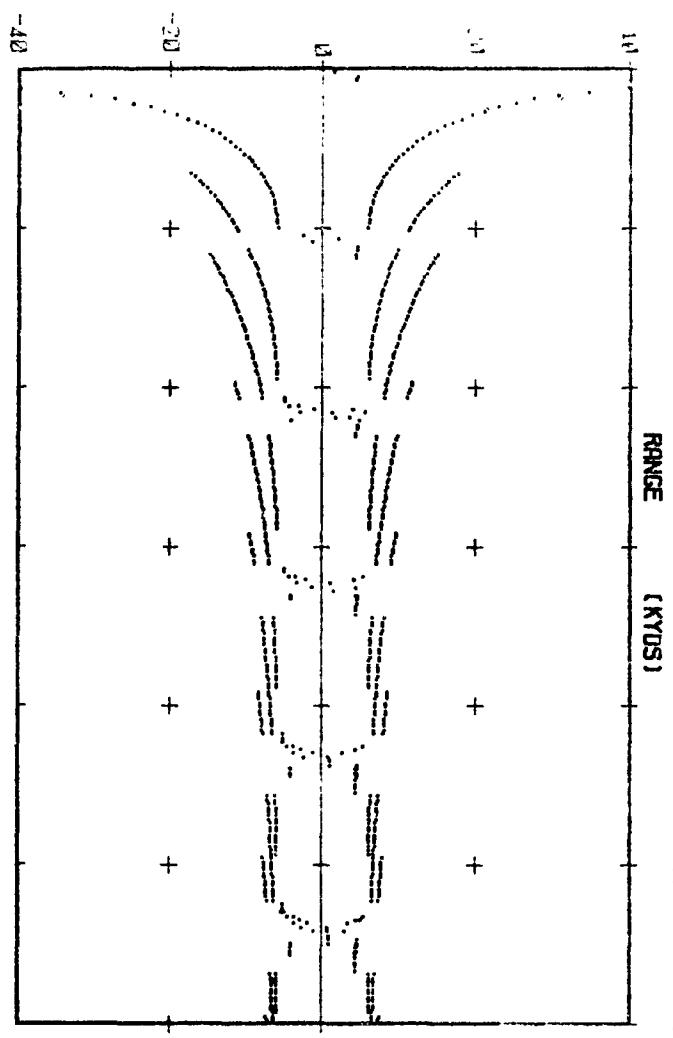
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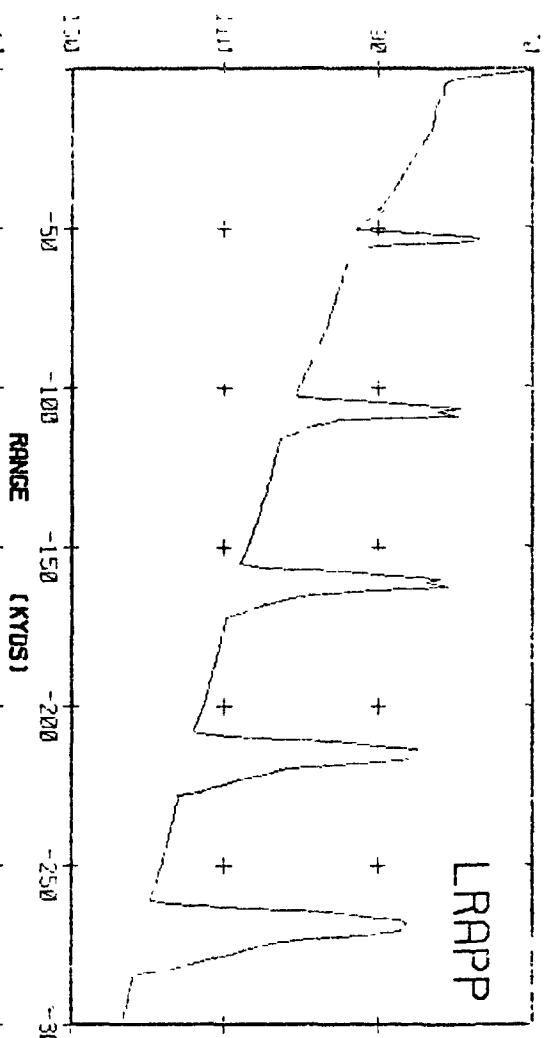
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646000

ARRIVAL ANGLE



DB LOSS



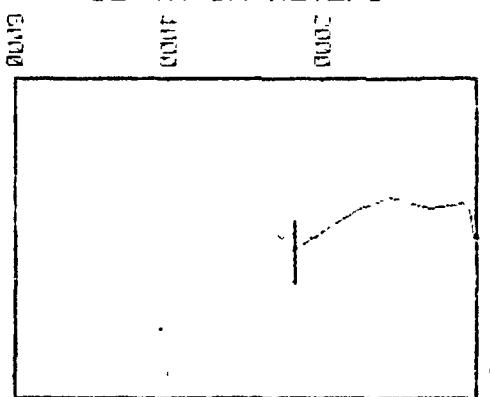
AREA 4A SUMNER

S 233 R 133 F 302

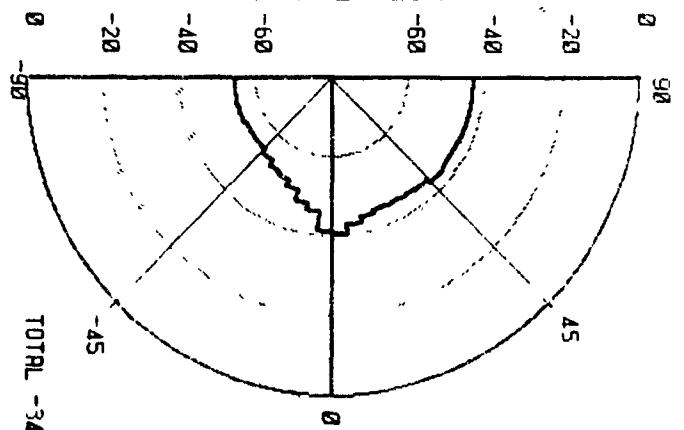
1450 M.S. 1500 1550

LRAFP

DEPTH IN METERS



NOISE (DB)



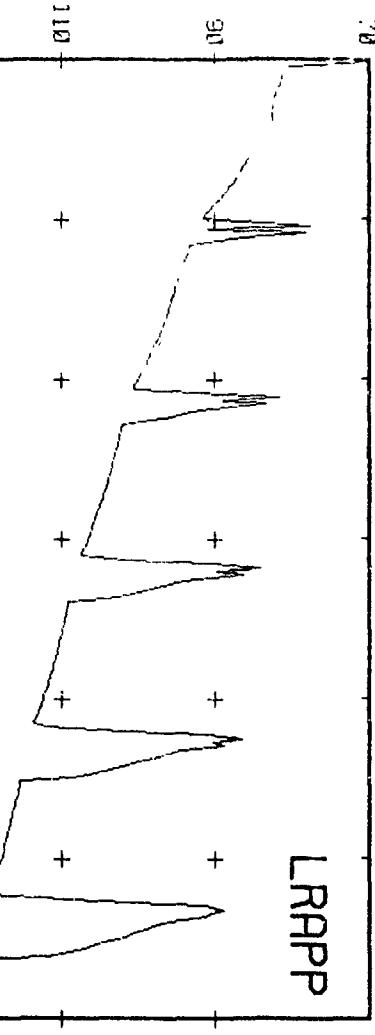
AREA 4R SUMMER

S 28 R 300 F 300

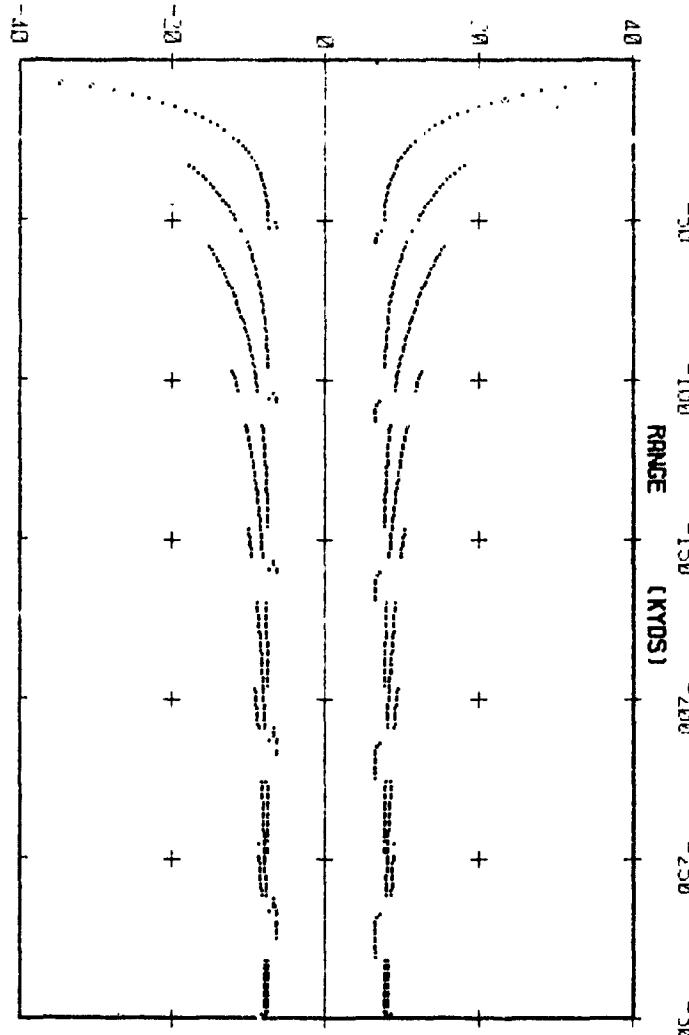
1450 M/S 1500 1550

LRAPP

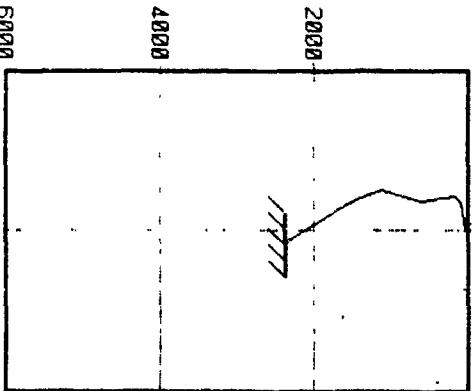
DB LOSS



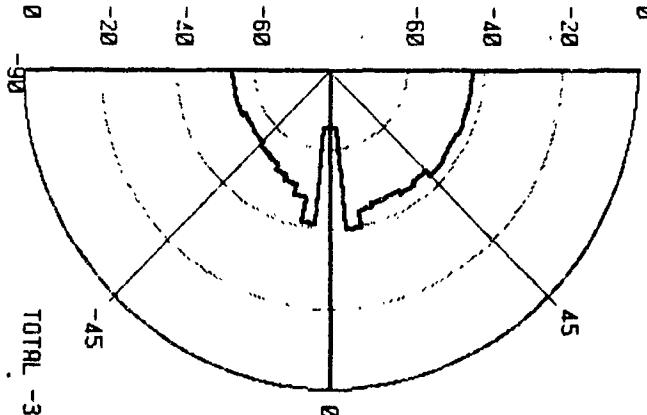
ARRIVAL ANGLE



DEPTH IN METERS

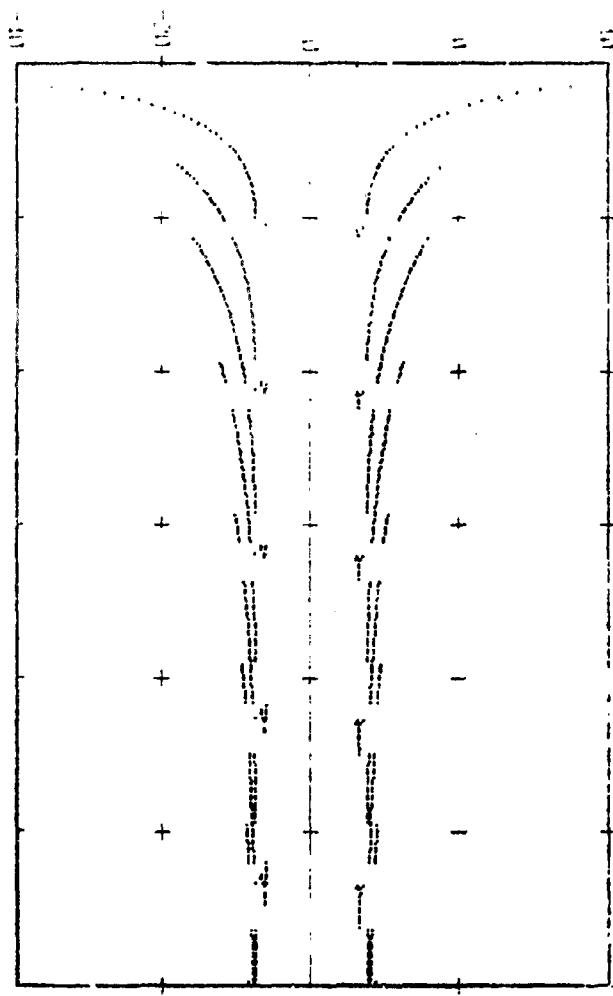


NOISE (DB)

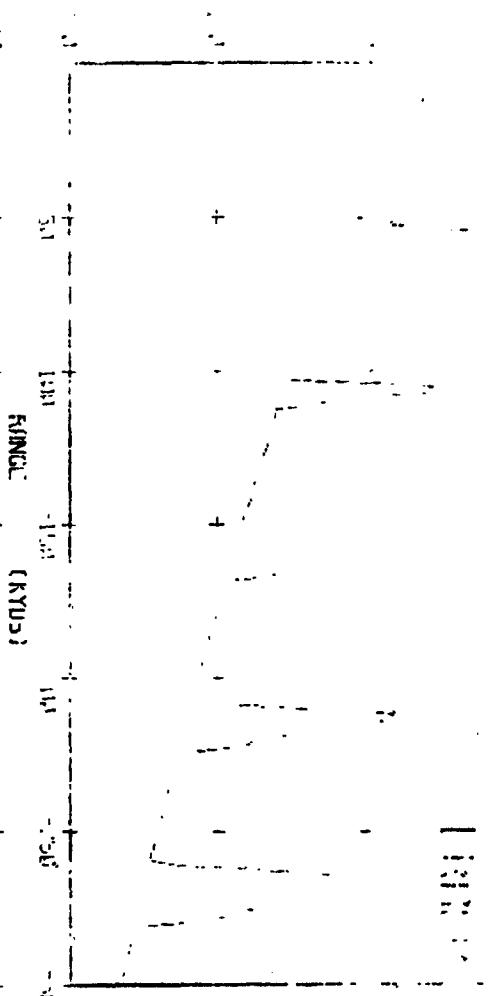


TOTAL -34.7 DB

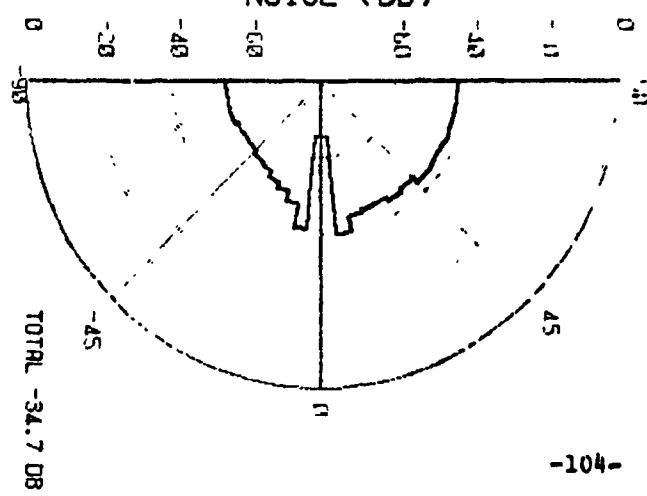
ARRIVAL ANGLE



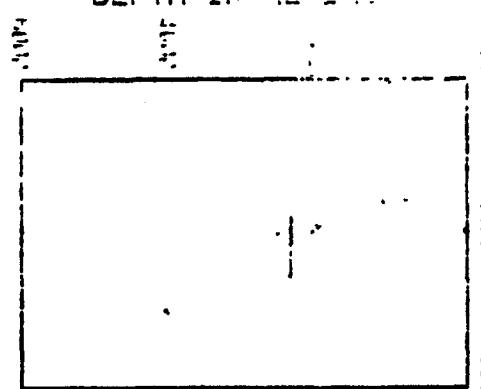
DB LOSS



NOISE (DB)

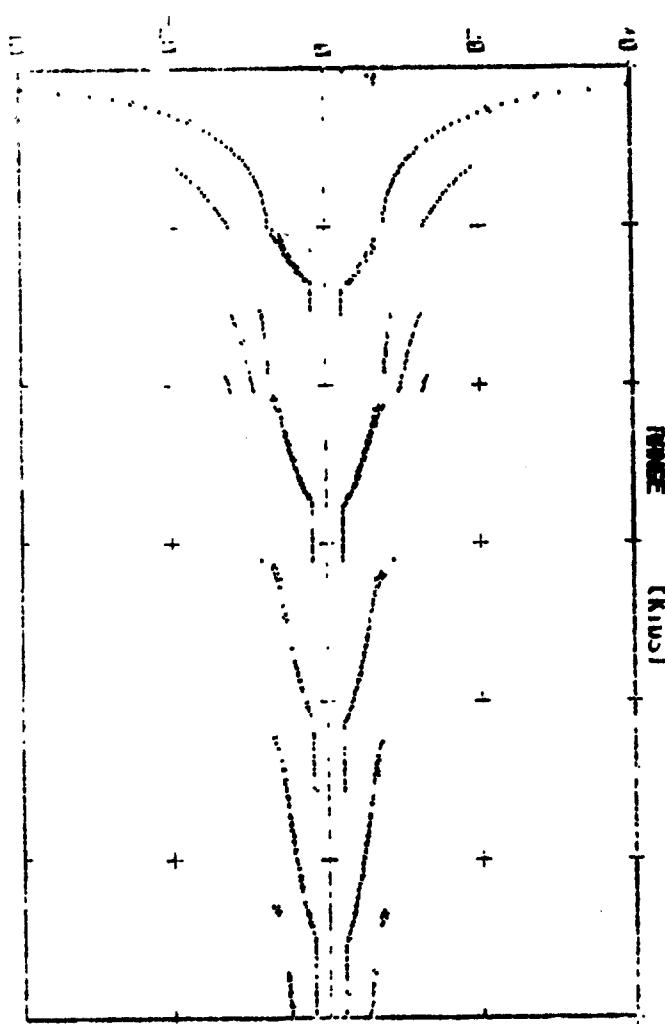


DEPTH IN METERS

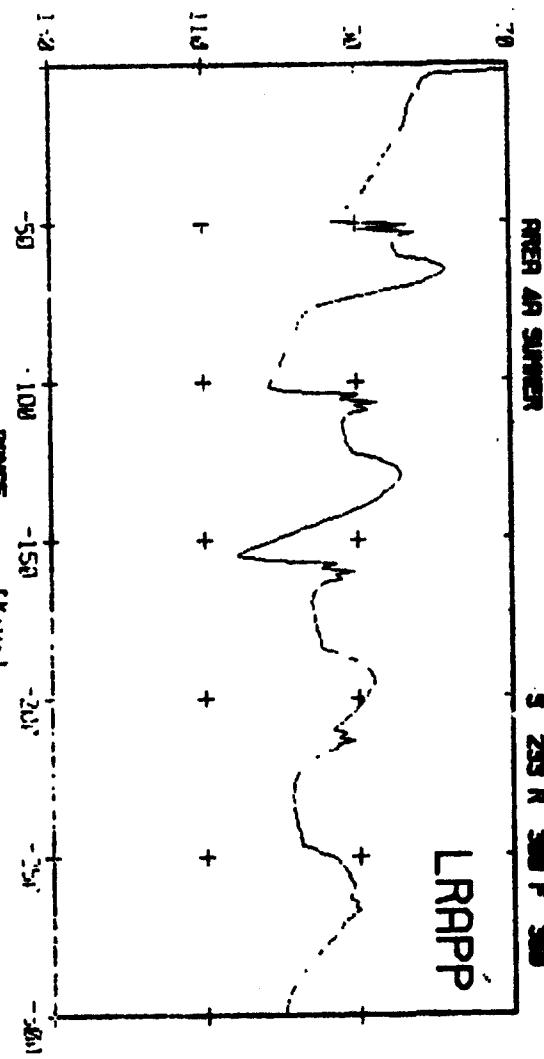


TOTAL -34.7 DB

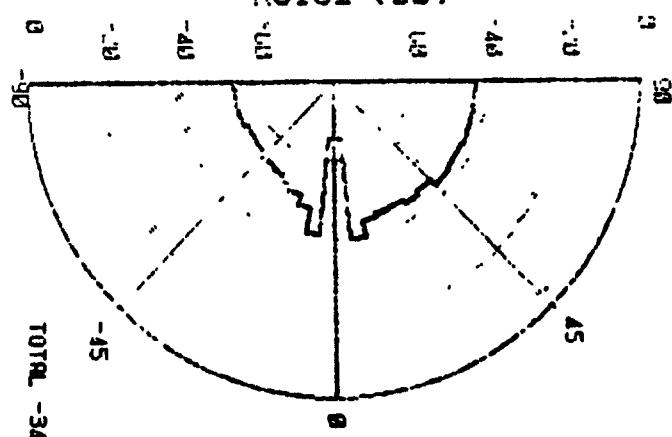
ARRIVAL ANGLE



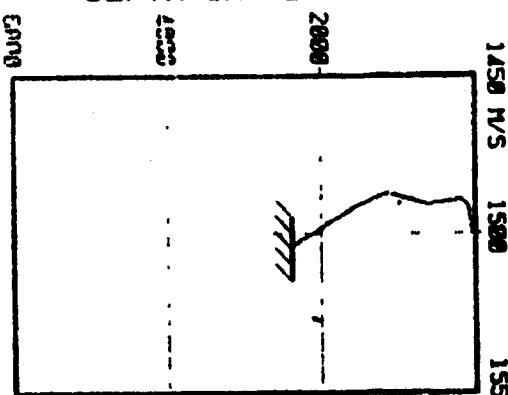
DB LOSS



NOISE (DB)



DEPTH IN METERS



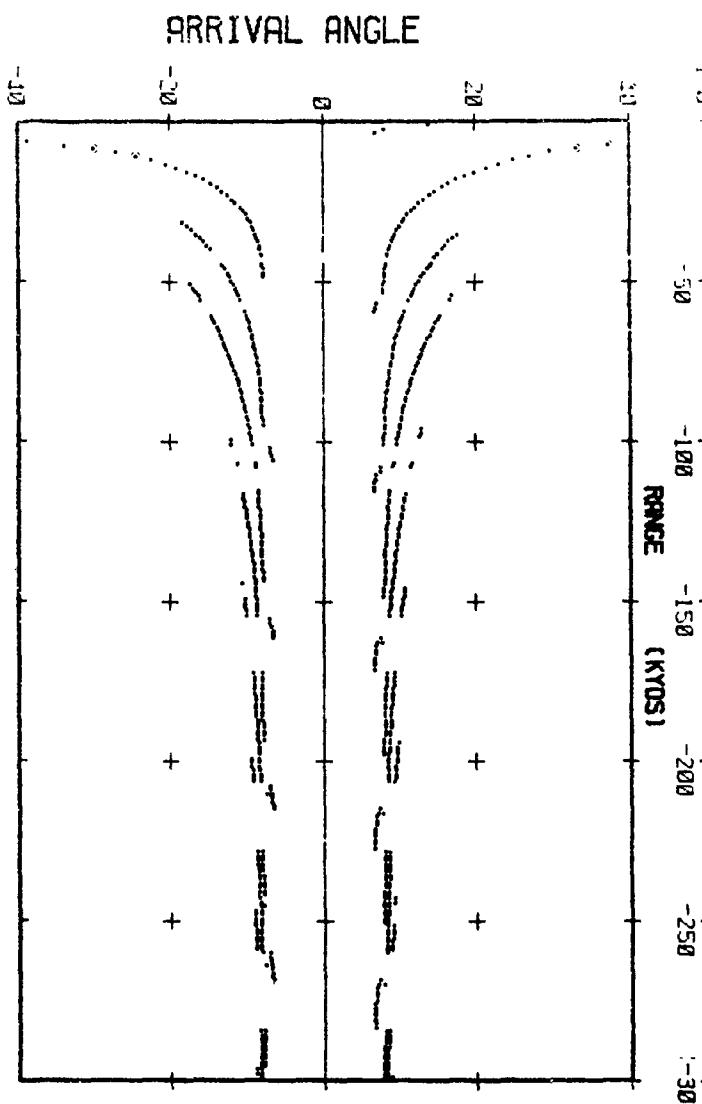
ARRER AR SUMMER

S 20 R 1000 F 300

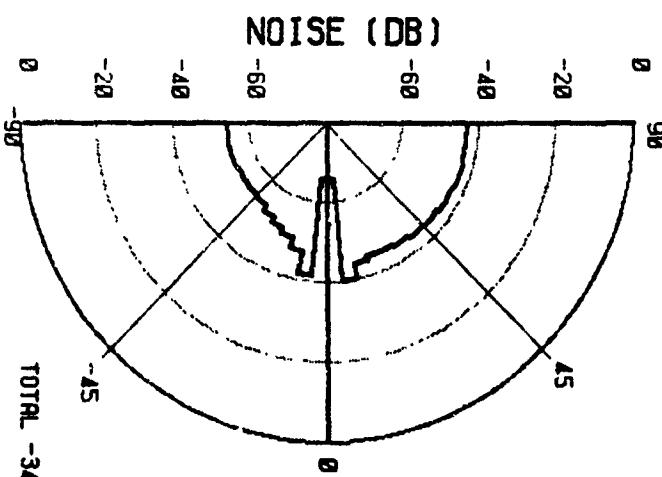
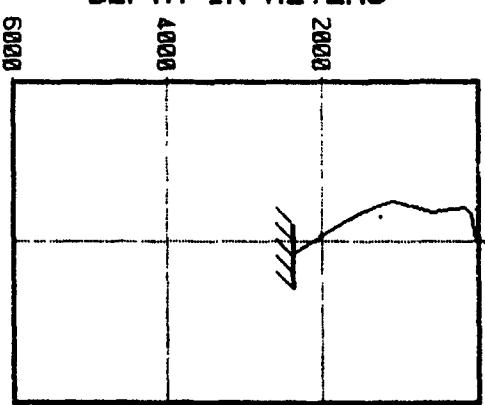
1450 M/S 1500 1550

DB LOSS

LRAPP



DEPTH IN METERS



AREA 4A SUMMER

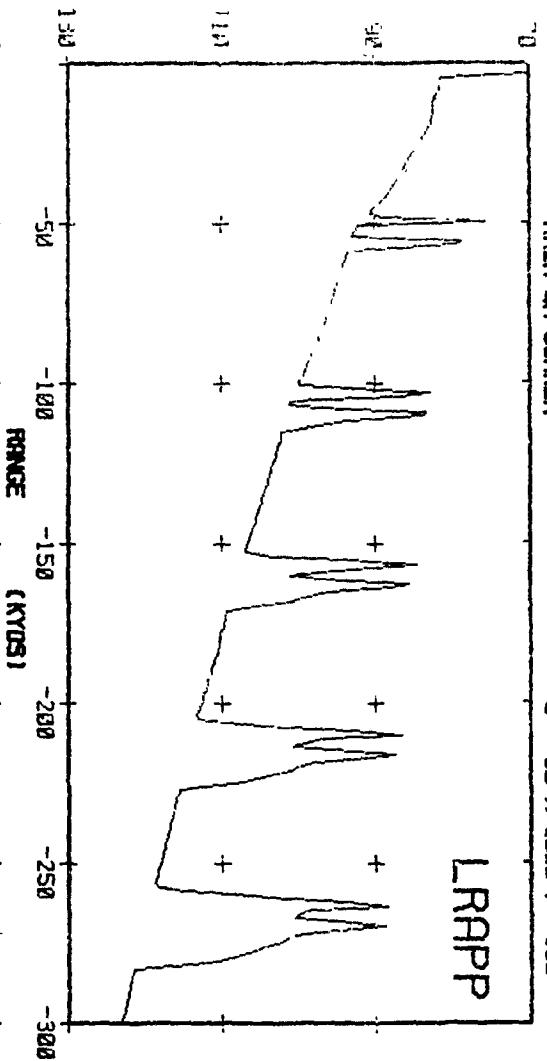
S SW R 1600 F 300

1450 H/S

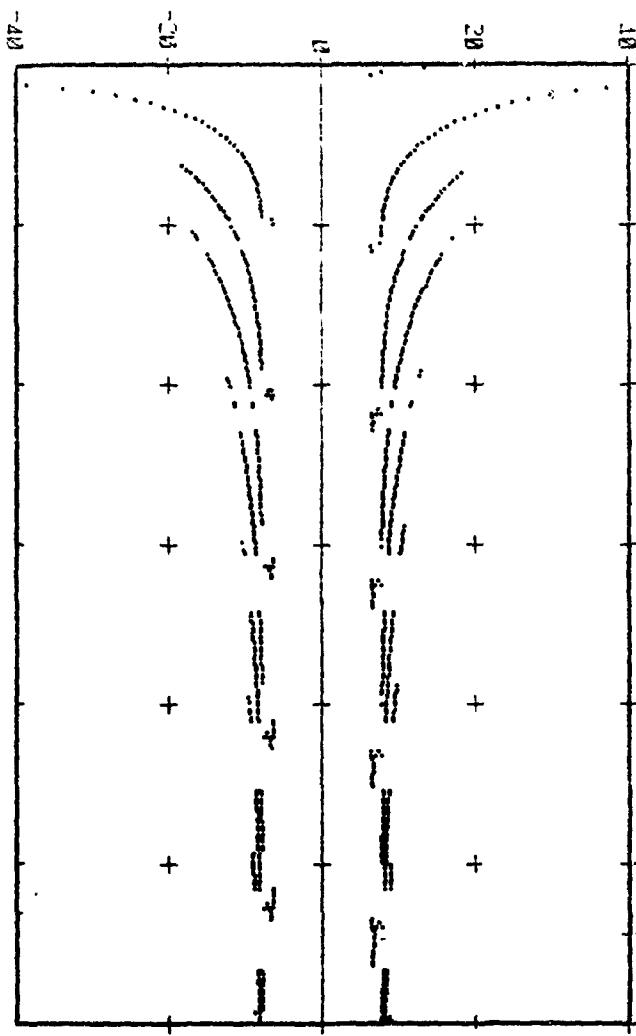
1500

1550

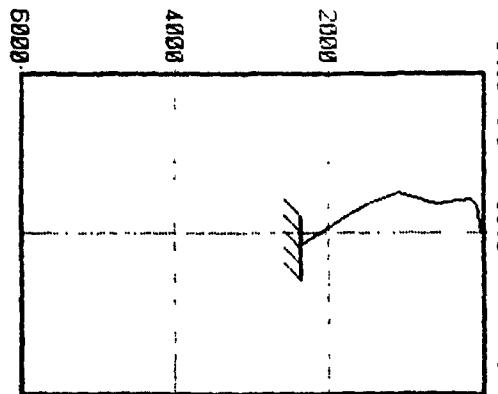
DB LOSS



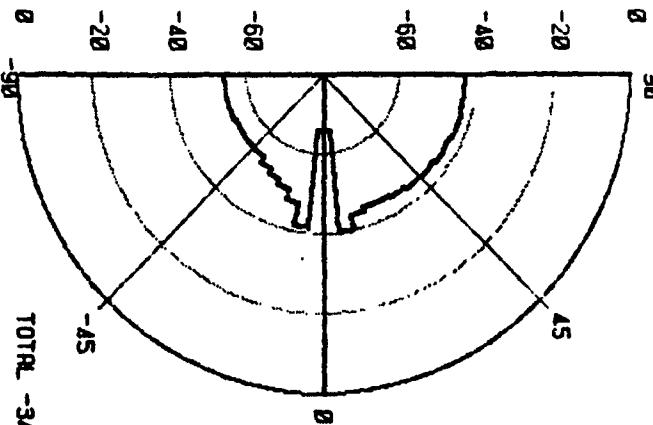
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



TOTAL -34.8 DB

70

ARR 4A SUMMER

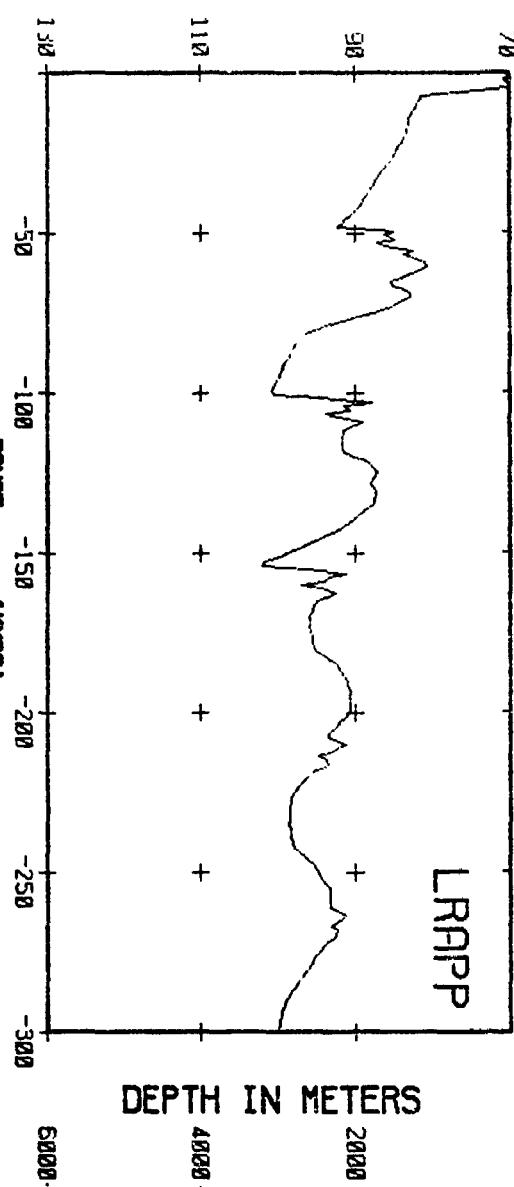
S 233 R 1000 F 300

1450 M/S

1500

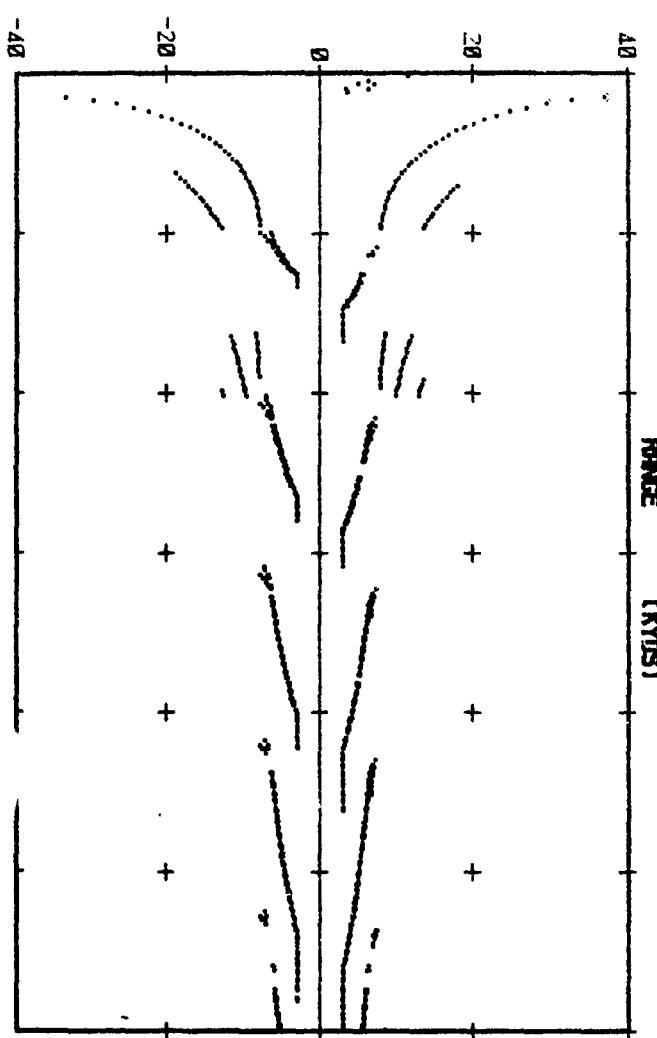
1550

DB LOSS

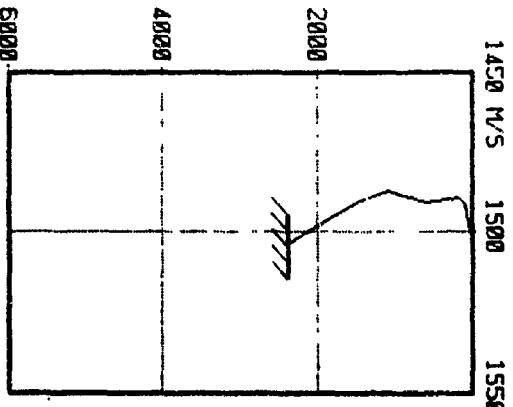


LRAPP

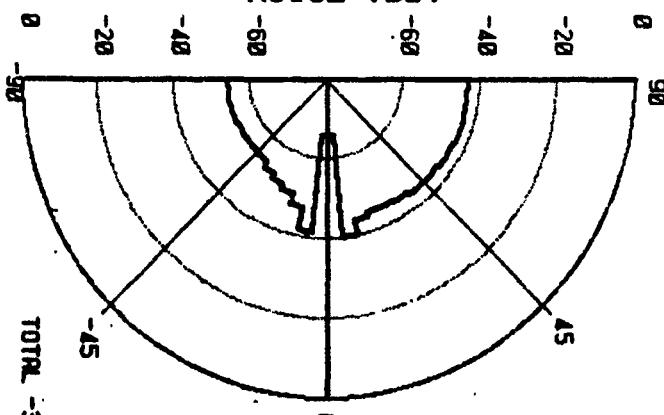
ARRIVAL ANGLE



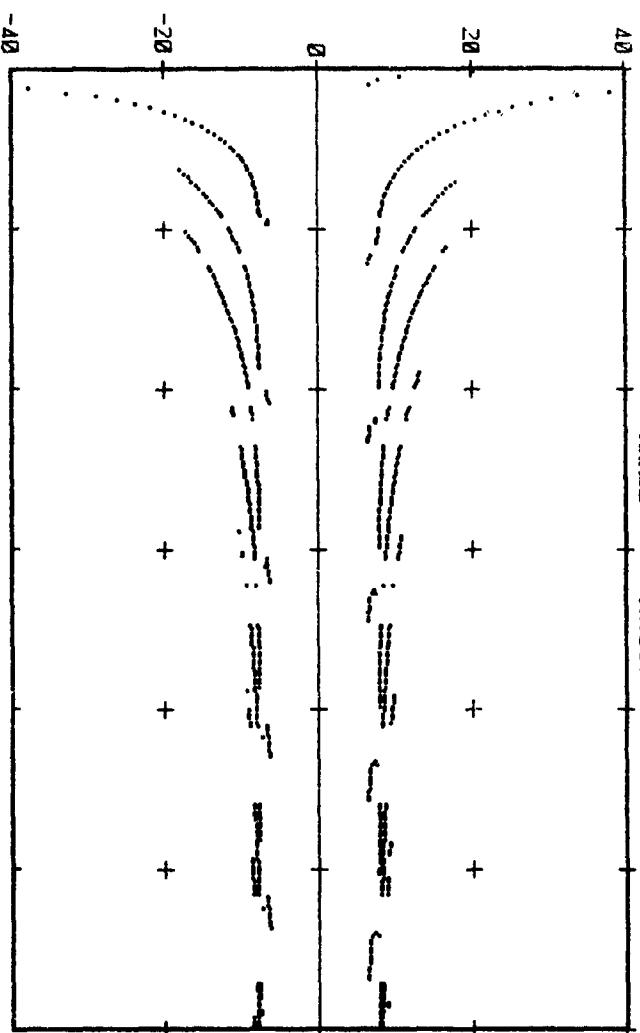
DEPTH IN METERS



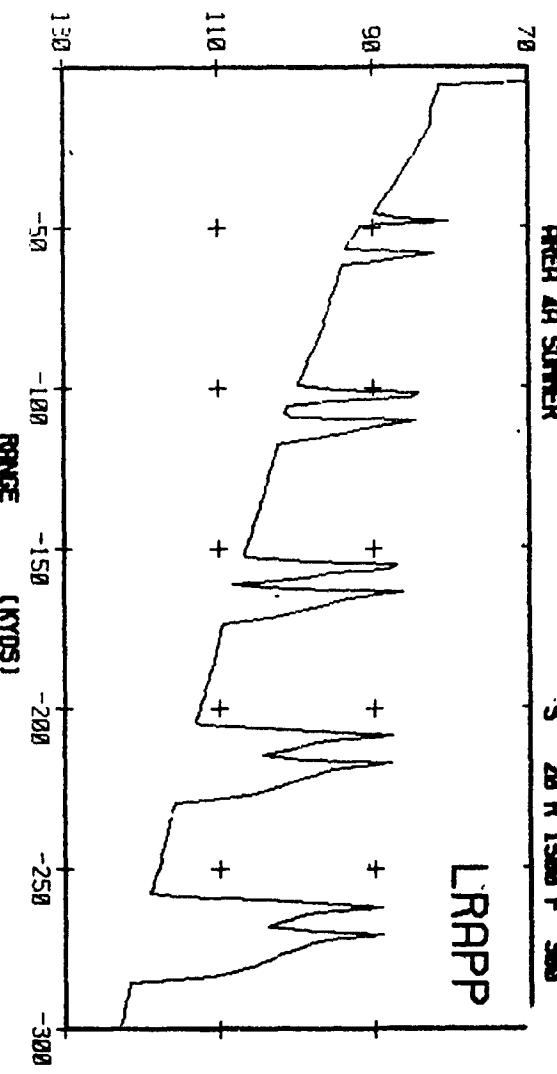
NOISE (DB)



ARRIVAL ANGLE



DB LOSS



70

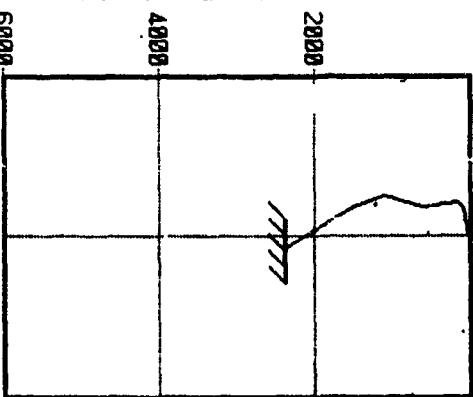
ARR 49 SUMMER

S 28 R 1500 F 3000

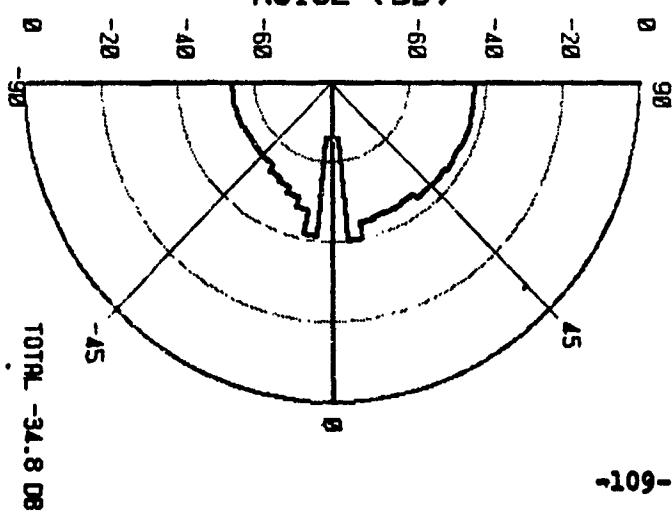
1450 M/S 1500 1550

L'RAPP

DEPTH IN METERS



NOISE (DB)



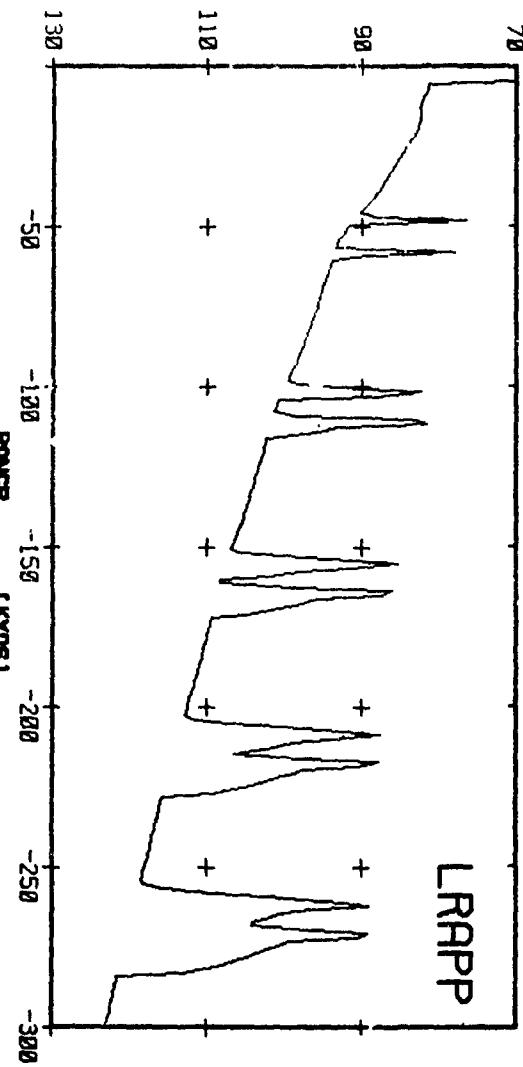
TOTAL -34.8 DB

RER AR SUMMER

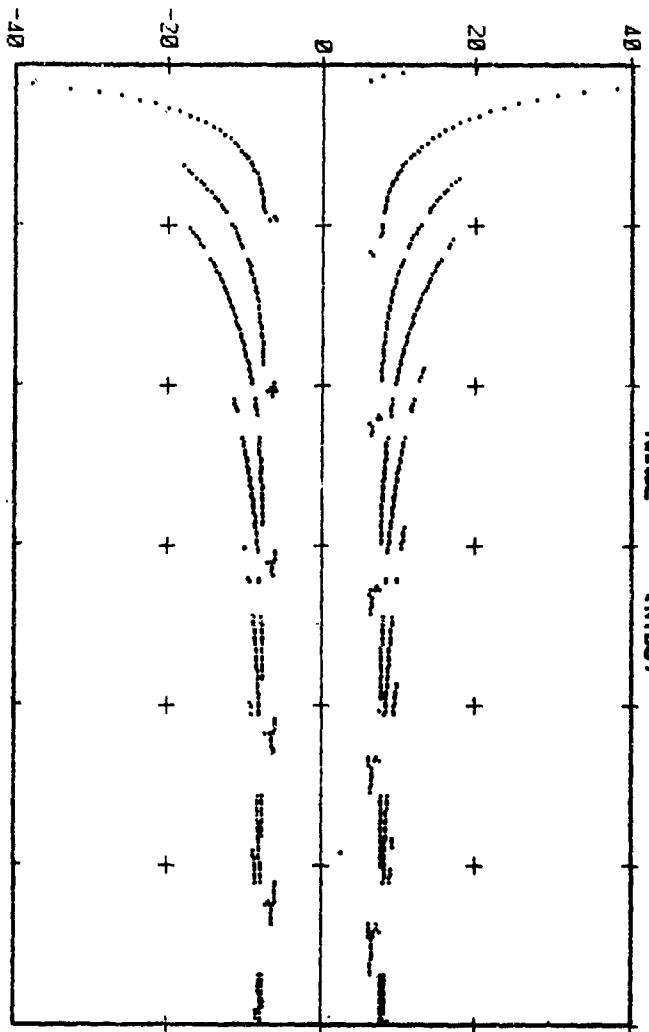
S 50 R 150 F 300

1450 M/S 1500 1550

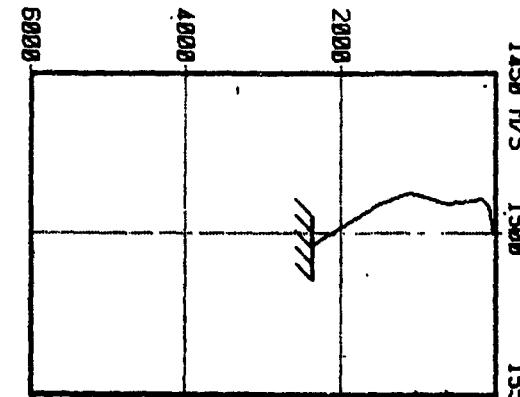
DB LOSS



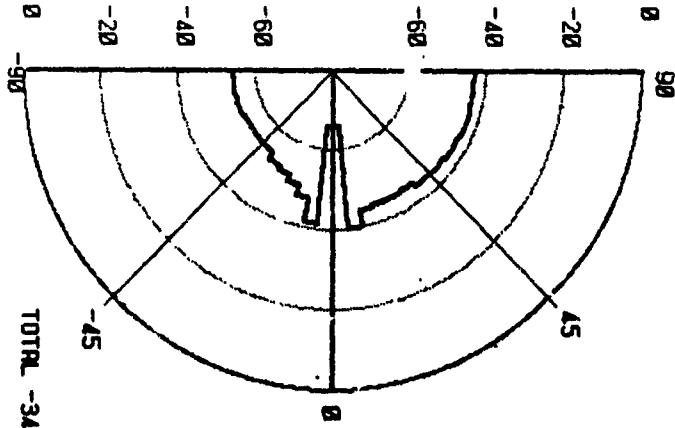
ARRIVAL ANGLE



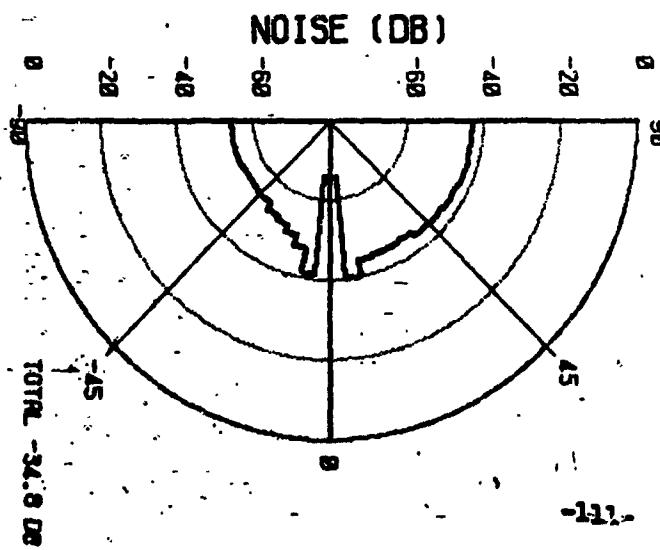
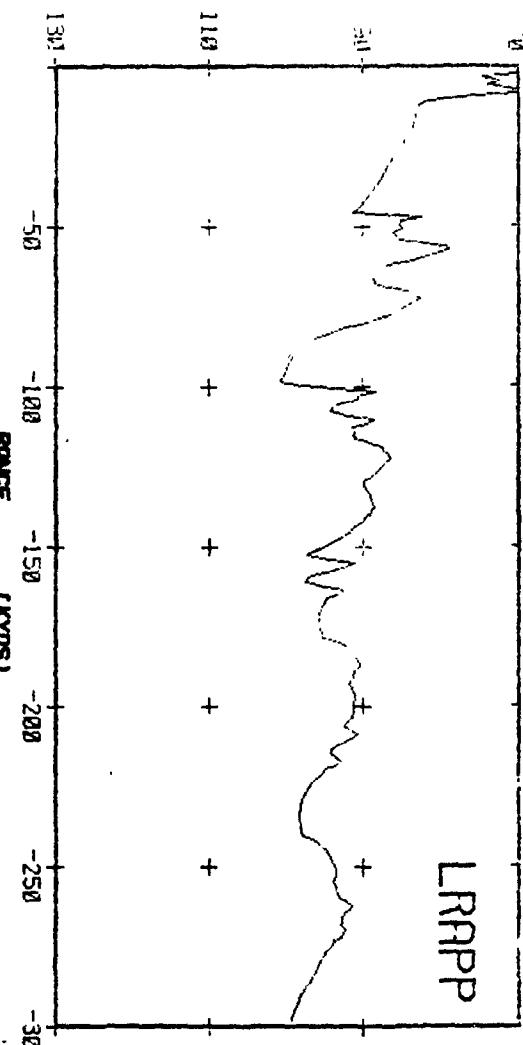
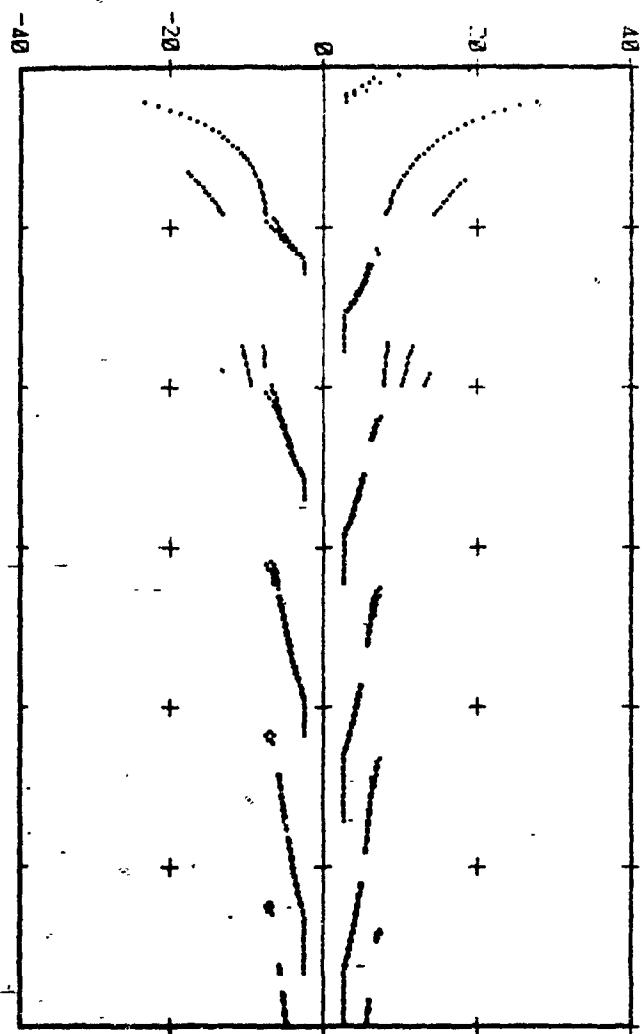
DEPTH IN METERS



NOISE (DB)



TOTAL -34.8 dB



RER 4R SUMMER

S 233 R 1503 F JEB

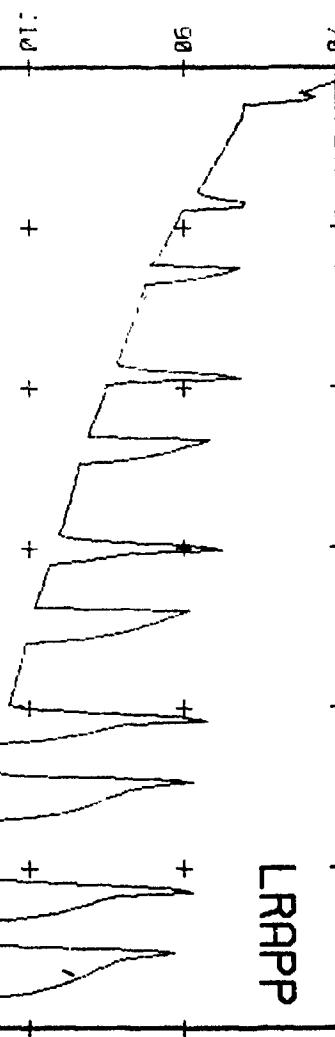
1450 M/S 1500 1550

ARRR AR SUMMER

S 29 R 3707 F 398

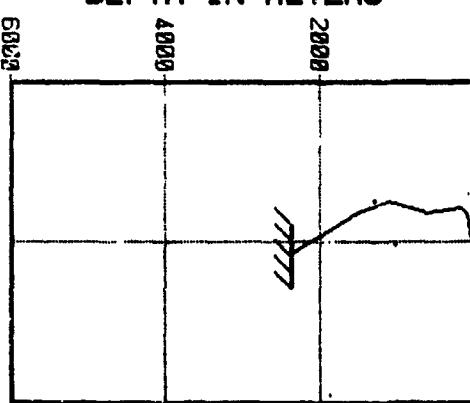
1450 M/S 1500 1558

DB LOSS

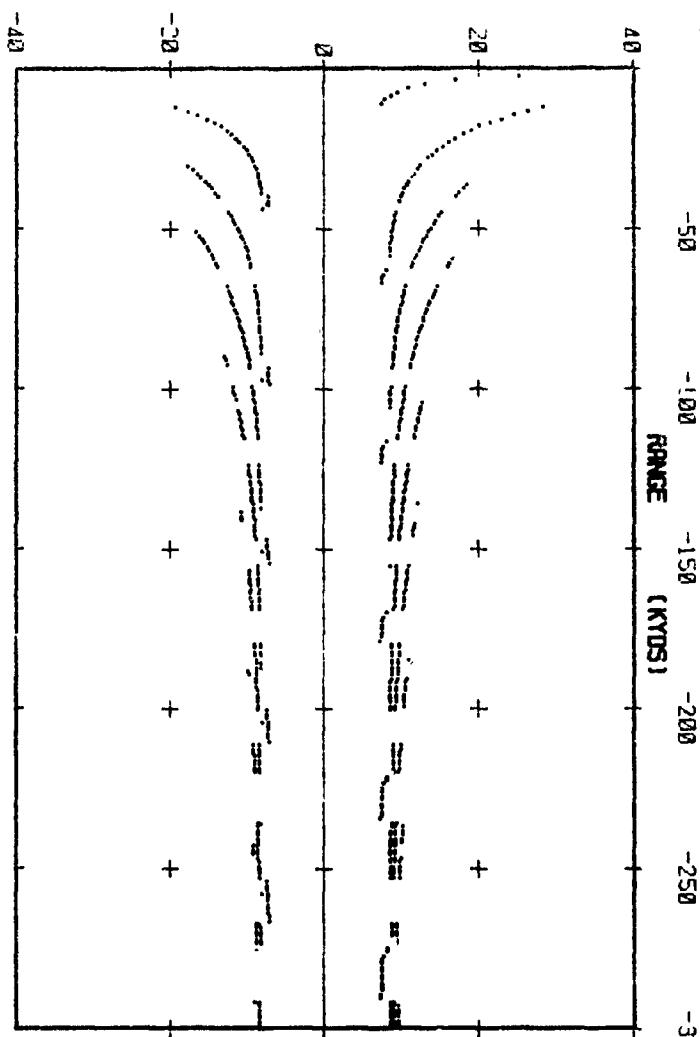


LRAPP

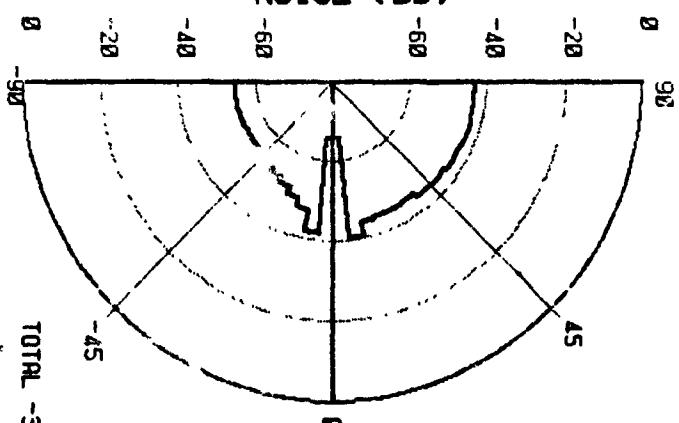
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)



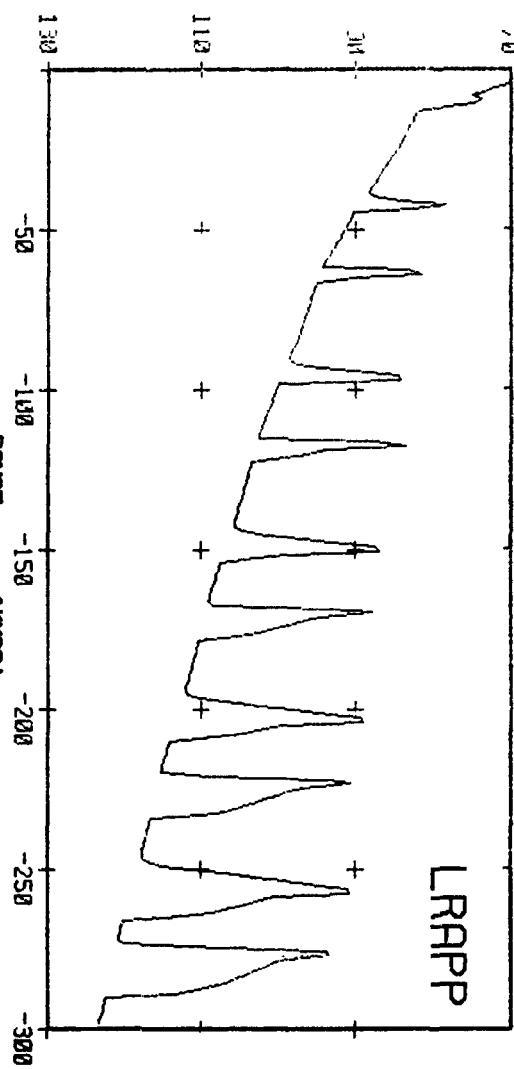
TOTAL -34.9 DB

ARR 4R SUMMER

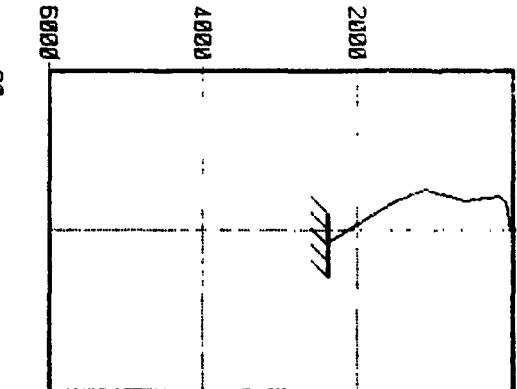
S 50 R 3767 F 300

1450 M/S 1500 1550

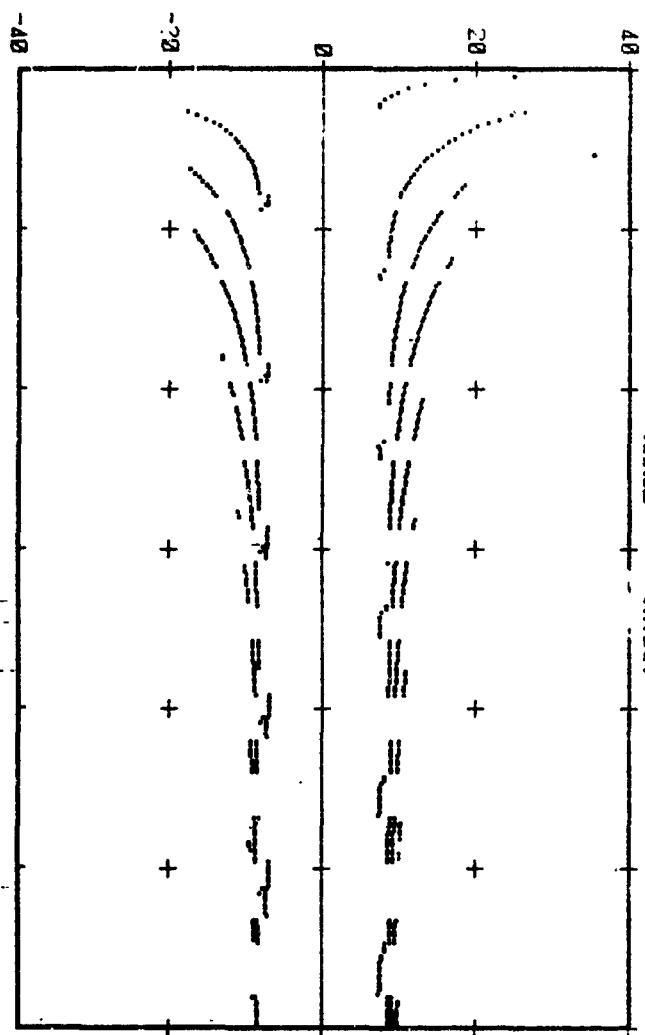
DB LOSS



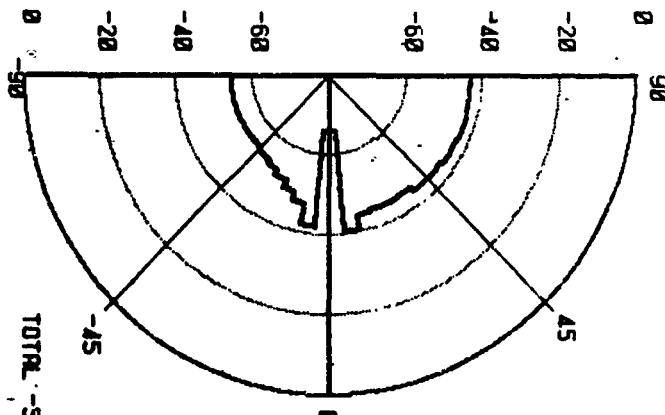
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)



70

PRED AIR SUMMER

S 233 R 5767 F 360

1458 M/S 1500 1534

LRAPP

DB LOSS

110

90

70

130

110

90

70

50

30

10

0

RANGE (KNTS)

0

50

100

150

200

250

300

ARRIVAL ANGLE

40

20

0

-20

-40

-60

-80

-100

-120

-140

-160

-180

-200

-220

-240

-260

-280

-300

-320

-340

-360

-380

-400

-420

-440

-460

-480

-500

-520

-540

-560

-580

-600

-620

-640

-660

-680

-700

-720

-740

-760

-780

-800

-820

-840

-860

-880

-900

-920

-940

-960

-980

-1000

0

20

40

60

80

100

120

140

160

180

200

220

240

260

280

300

320

340

360

380

400

420

440

460

480

500

520

540

560

580

600

620

640

660

680

700

720

740

760

780

800

820

840

860

880

900

920

940

960

980

1000

NOISE (DB)

0

20

40

60

80

100

120

140

160

180

200

220

240

260

280

300

320

340

360

380

400

420

440

460

480

500

520

540

560

580

600

620

640

660

680

700

720

740

760

780

800

820

840

860

880

900

920

940

960

980

1000

DEPTH IN METERS

0

2000

4000

6000

8000

10000

12000

14000

16000

18000

20000

22000

24000

26000

28000

30000

32000

34000

36000

38000

40000

42000

44000

46000

48000

50000

52000

54000

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68000

70000

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86000

88000

90000

92000

94000

96000

98000

100000

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920

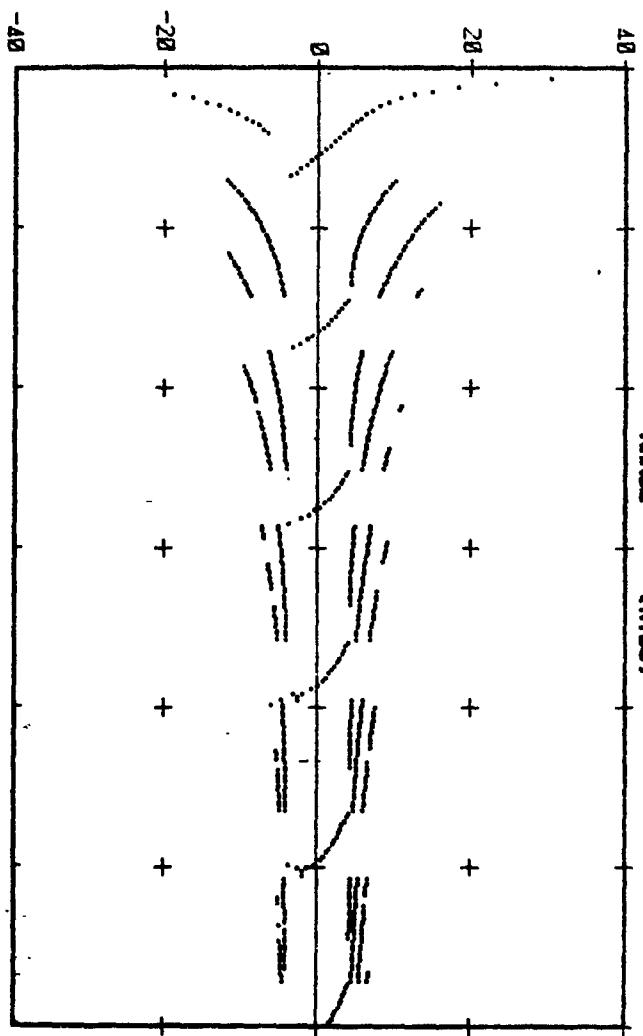
940

960

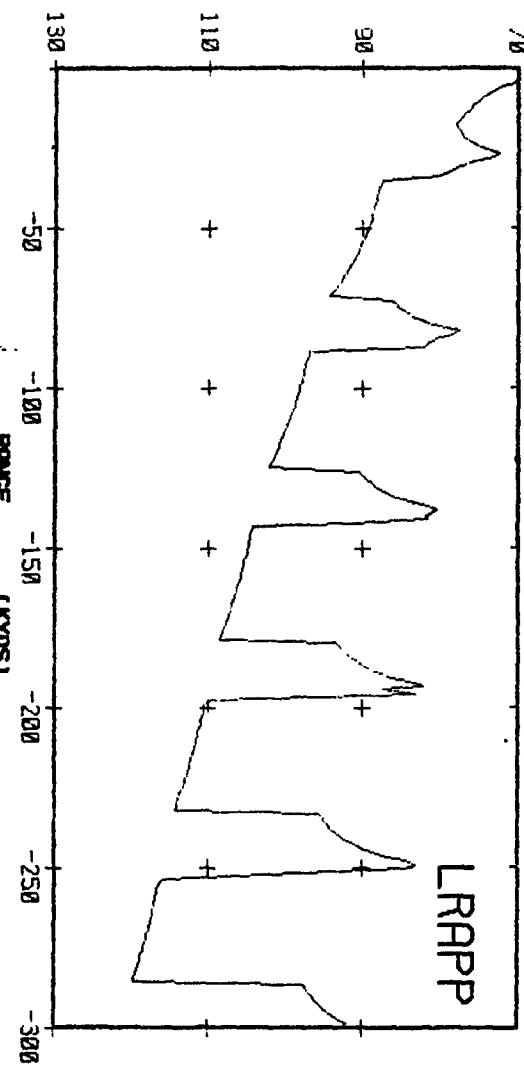
980

1000

ARRIVAL ANGLE



DB LOSS



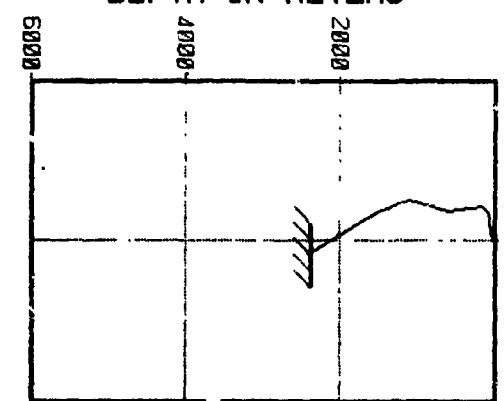
FRIER 4R SUMMER

S 20 R 6956 F 3200

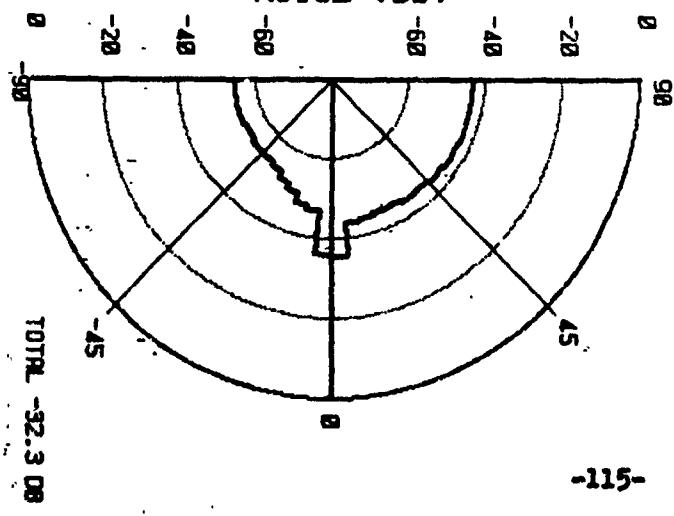
LRAPP

1450 M/S 1500 1550

DEPTH IN METERS



NOISE (DB)



TOTAL -32.3 DB

70

ARR 4R SUMMER

S 50 R 6956 F 309

1450 M/S

1523

1550

DB LOSS

130
110
90
70

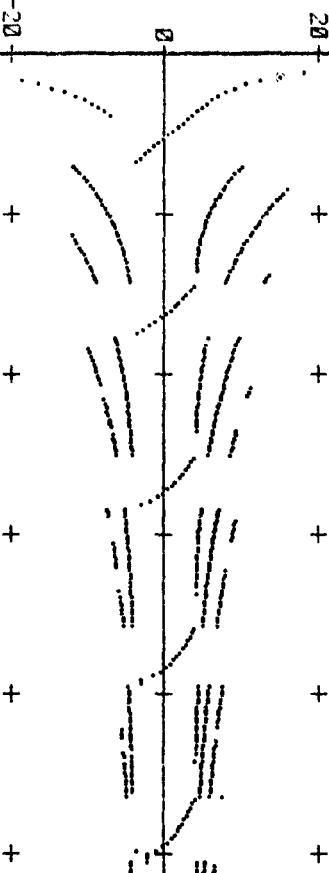
RANGE (KMS)

6000
4000
2000

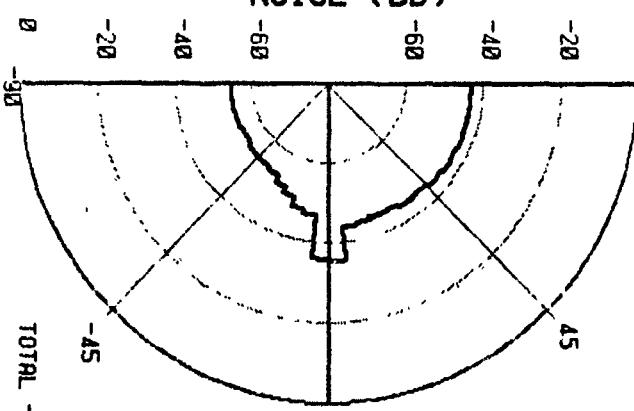
DEPTH IN METERS

0
2000
4000
6000

ARRIVAL ANGLE



NOISE (DB)

0
-20
-40
-60
-800
20
40
60
80

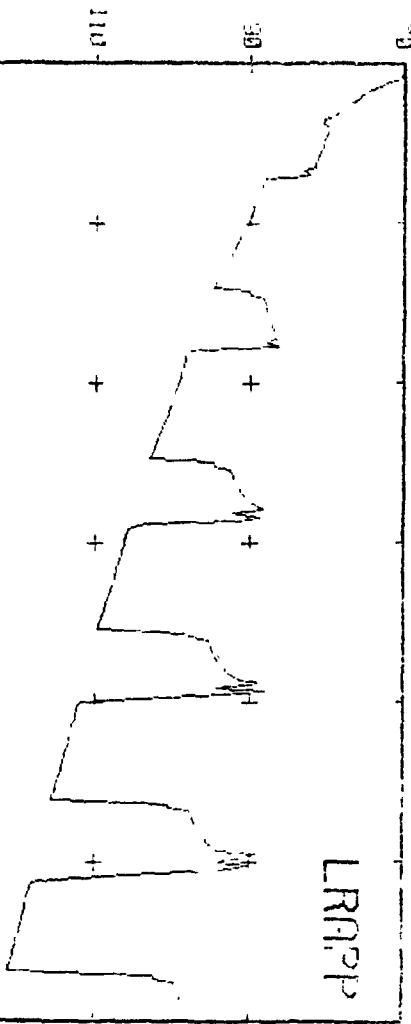
TOTAL -32.3 DB

AKER 49 SUMMER

S 233 R 6336 F 34d

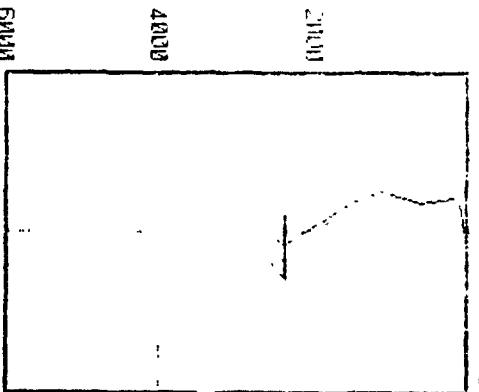
14:0 H 5 1500 1550

DB LOSS

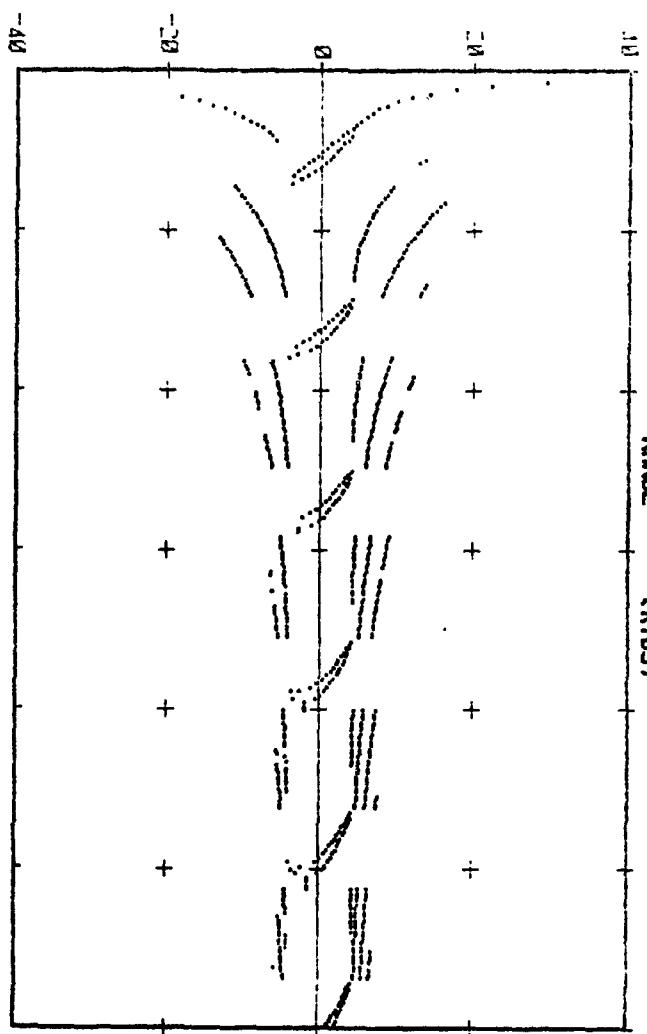


LRF_{DP}

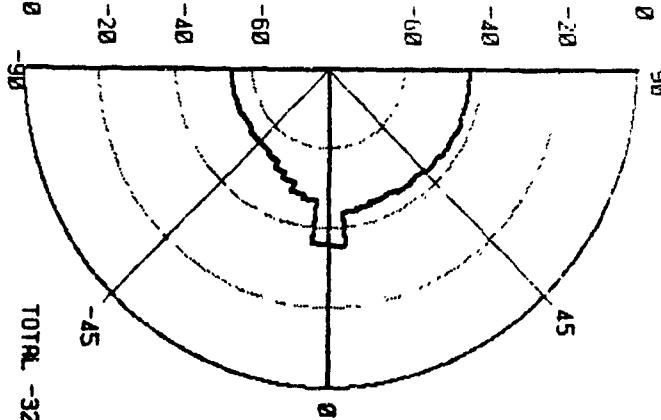
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)



TOTAL -32.3 DB

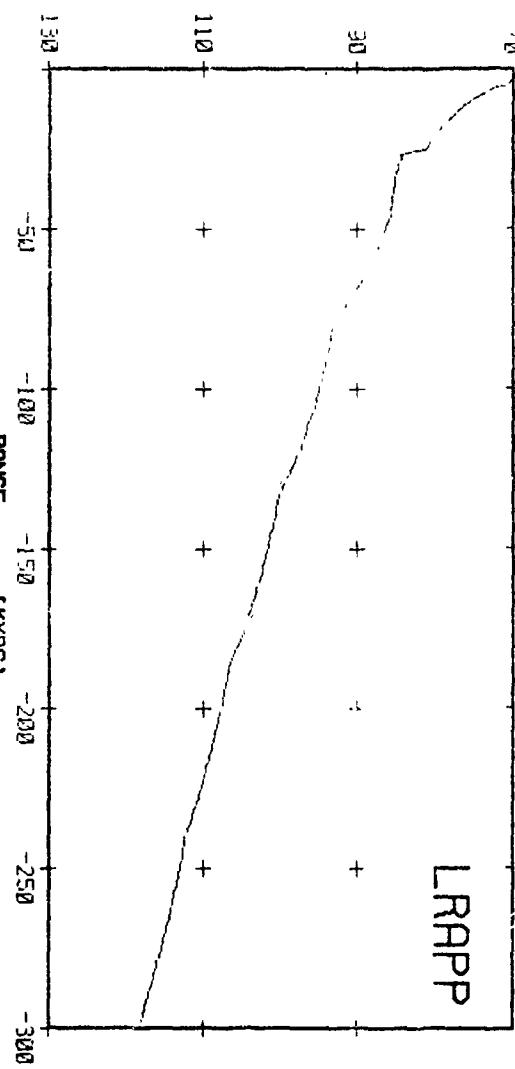
AREA 4R SUMMER

S 20 R 7798 F 300

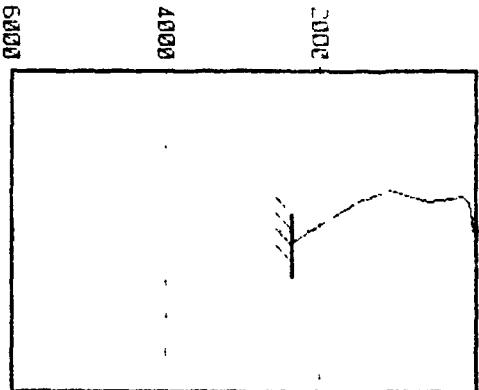
1450 M/S 1500 1550

LRAPP

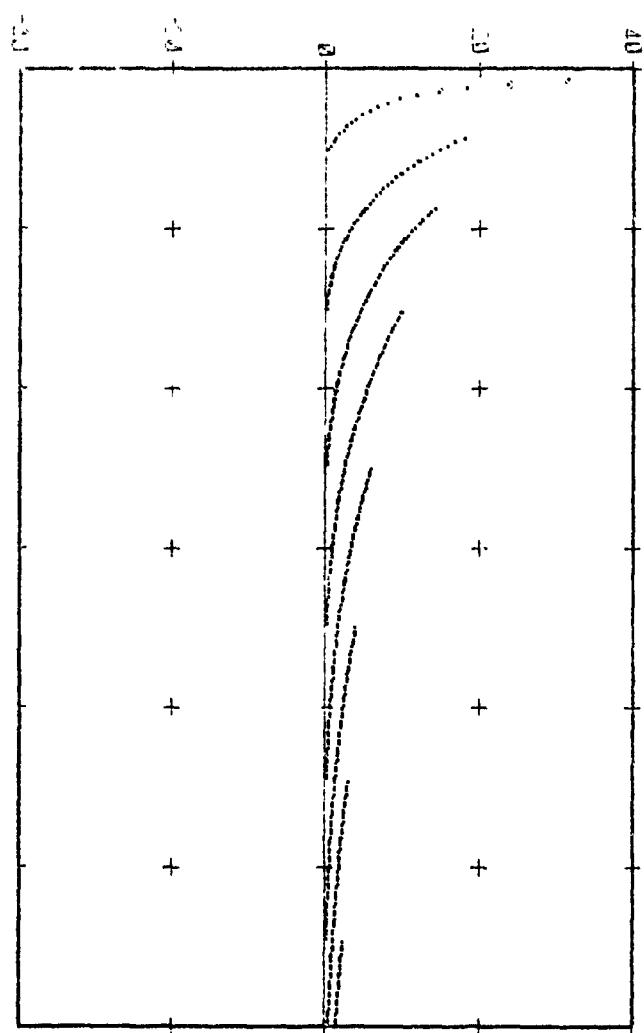
DB LOSS



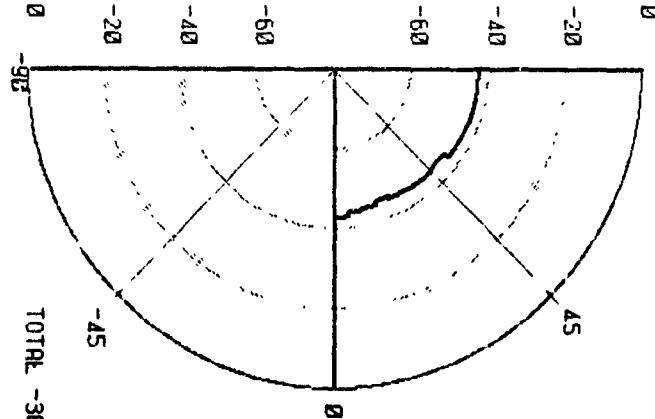
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)



AREA 4R SUMMER

S 50 R 7798 F 360

1450 M/S 1500 - 1550

DB LOSS

LRAPP

111

112

113

114

115

116

117

118

119

120

121

122

123

124

125

126

127

128

129

130

111

112

113

114

115

116

117

118

119

120

121

122

123

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126

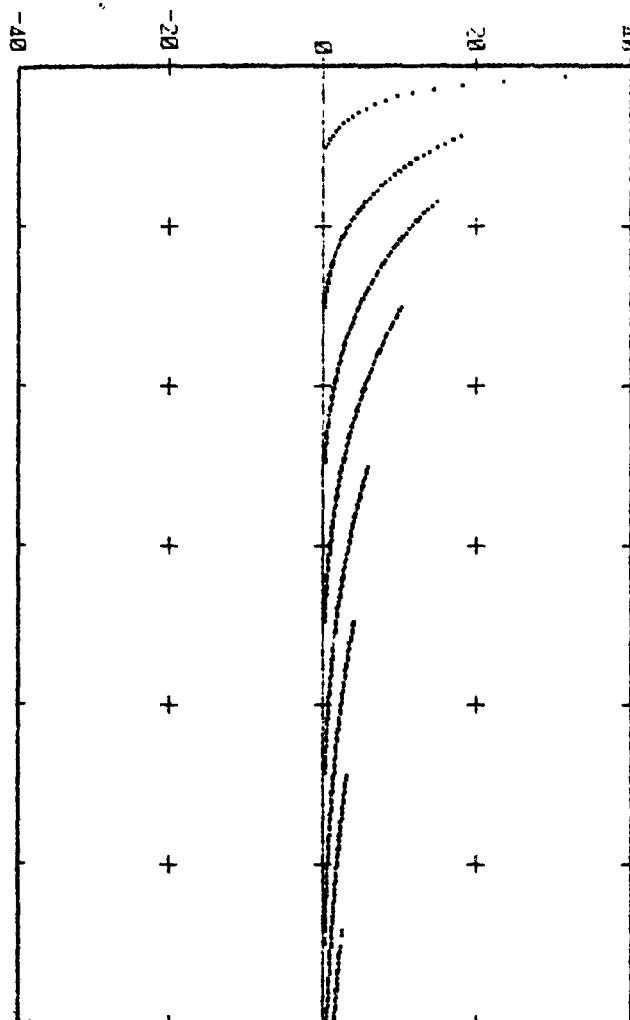
127

128

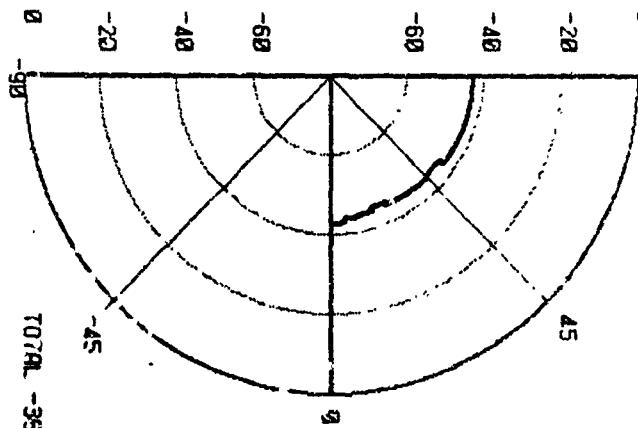
129

130

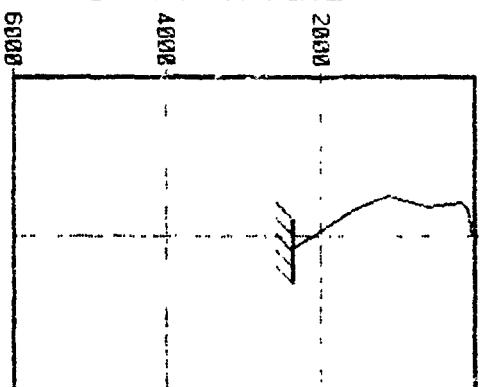
ARRIVAL ANGLE



NOISE (DB)



DEPTH IN METERS



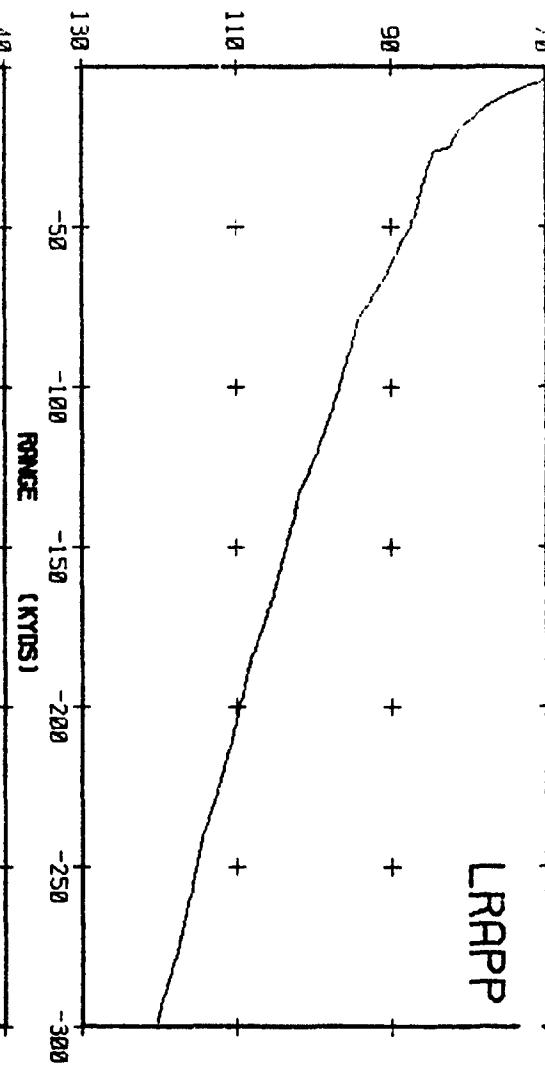
AREA 4A SUMMER

S 233 R 7748 F 368

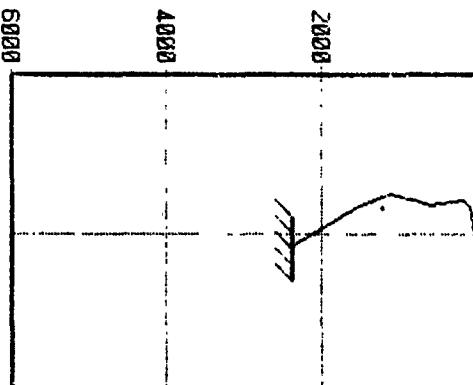
1458 M/S 1500 1550

LRAPP

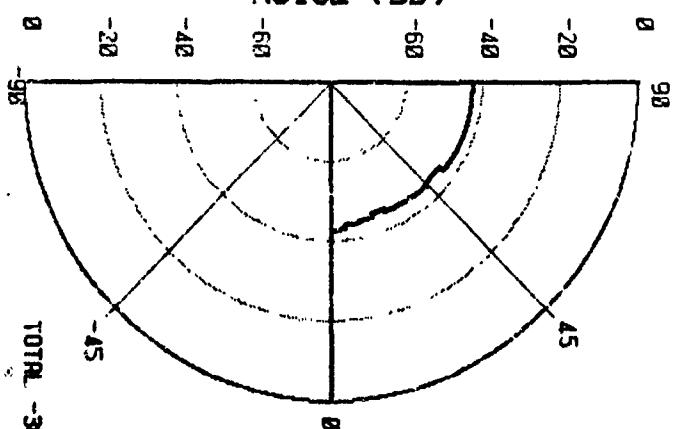
DB LOSS



DEPTH IN METERS

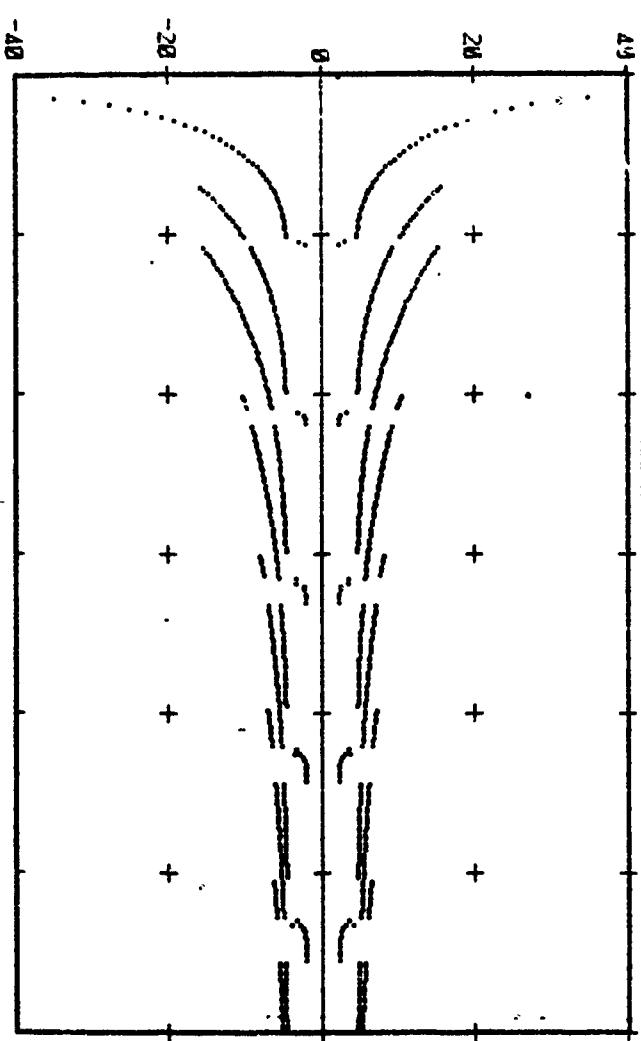


NOISE (DB)

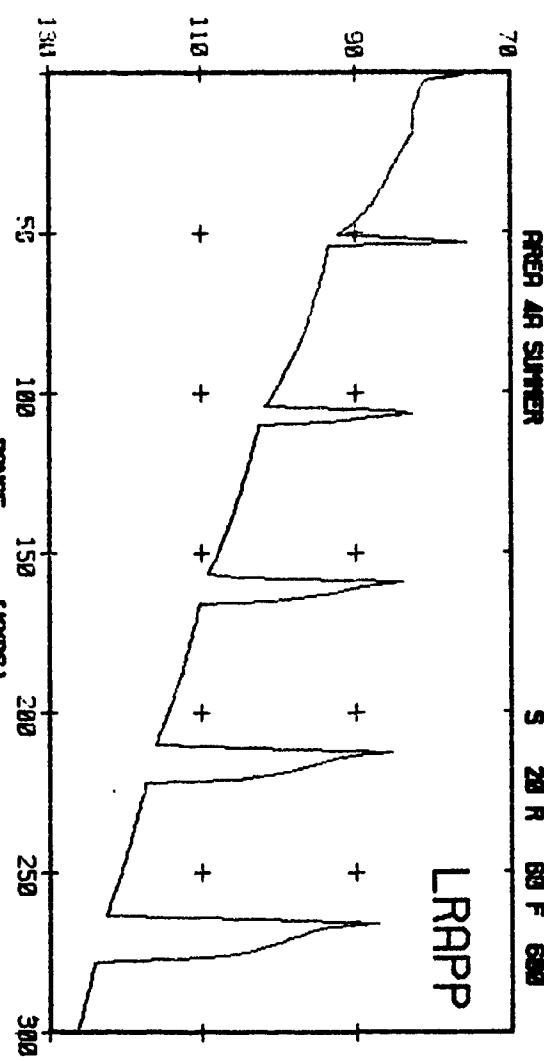


TOTAL -36.1 DB

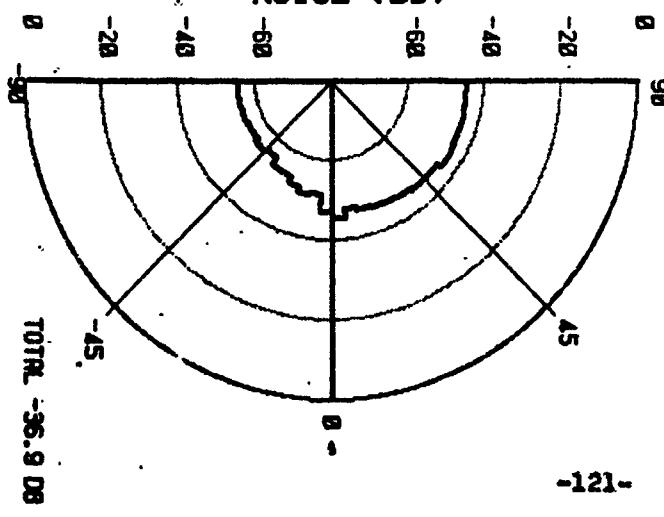
ARRIVAL ANGLE



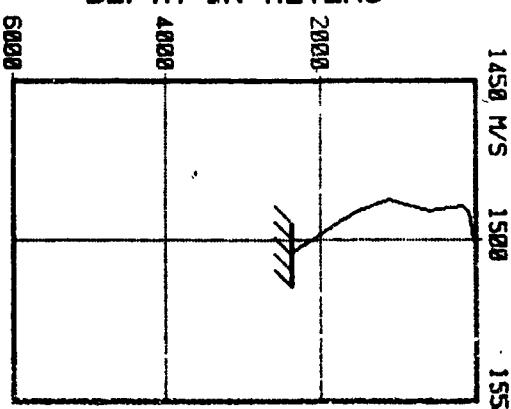
DB LOSS



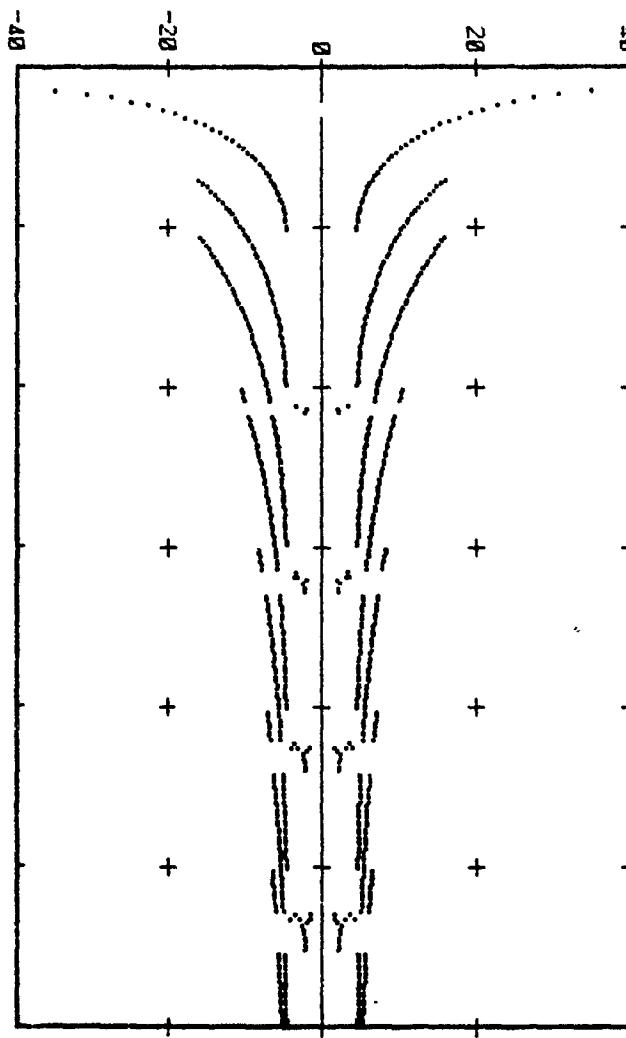
NOISE (DB)



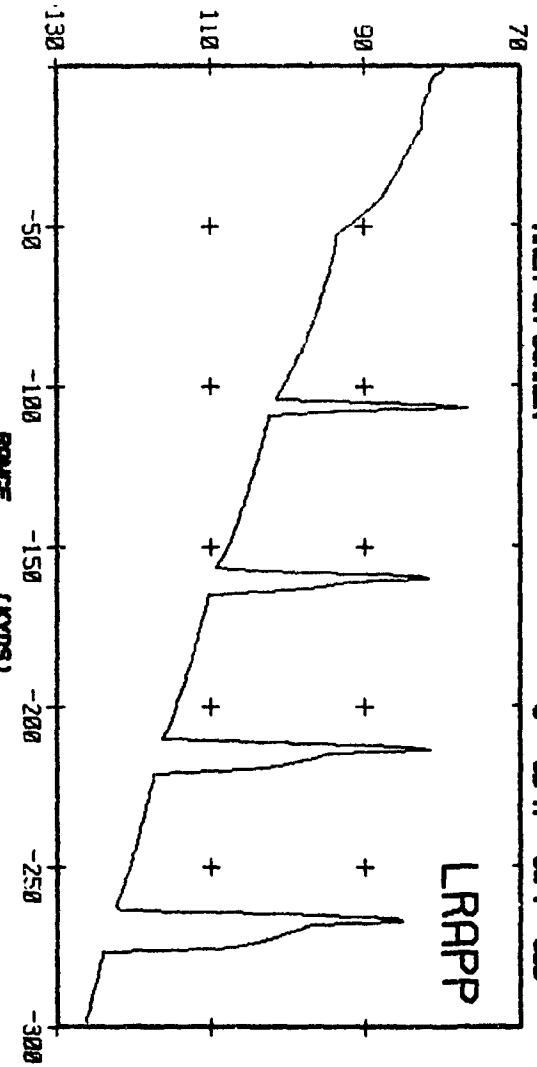
DEPTH IN METERS



ARRIVAL ANGLE.

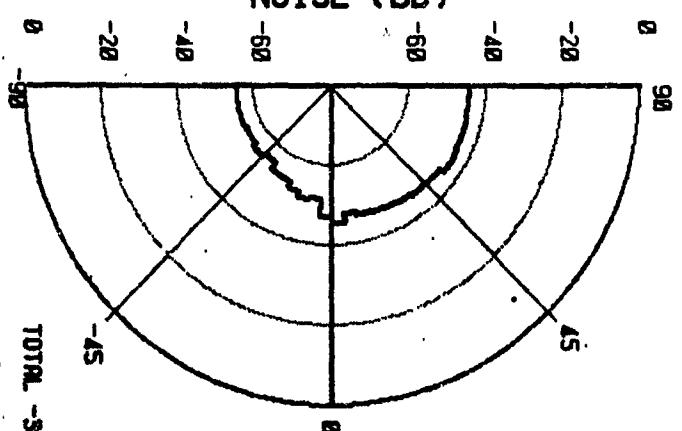


DB LOSS



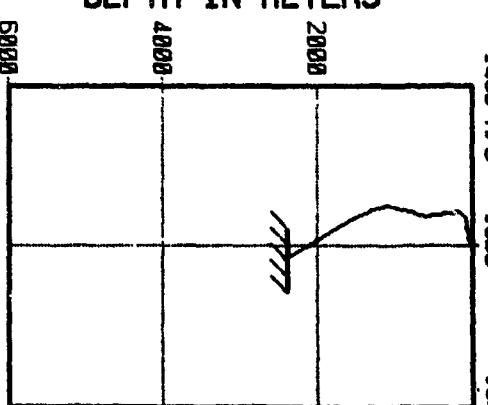
AREA 4A SUMMER S 59 R 69 F 680 LRAPP

NOISE (DB)

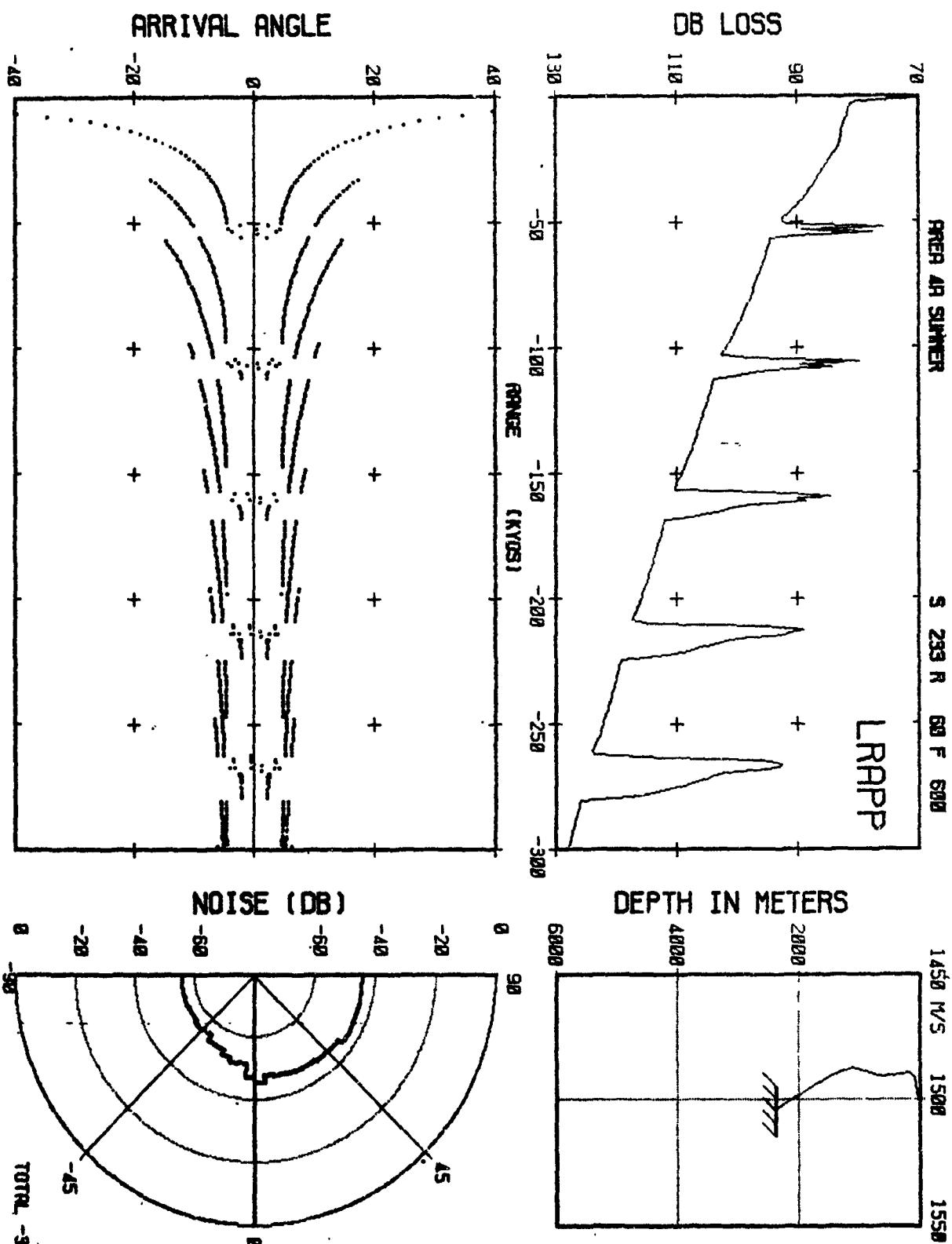


TOTAL -35.9 DB

DEPTH IN METERS



1450 H/S 1500 1550



TOTAL -35.9 08

-123-

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permit fully legible reproduction

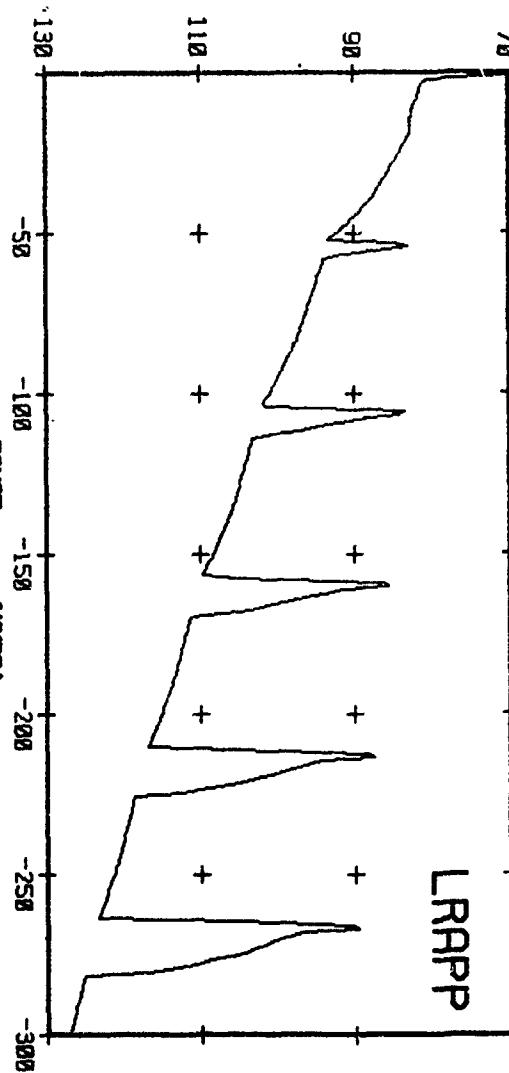
70

PRED A4 SUMMER

S 20 R 133 F 600

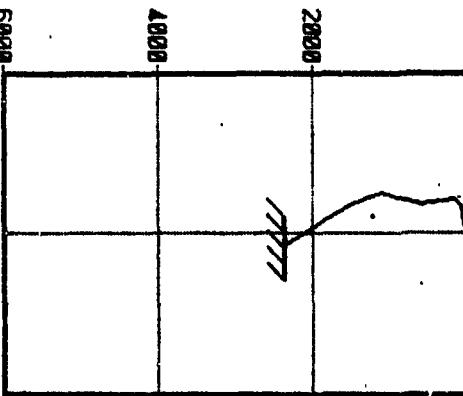
1458 WS 1508 1558

DB LOSS

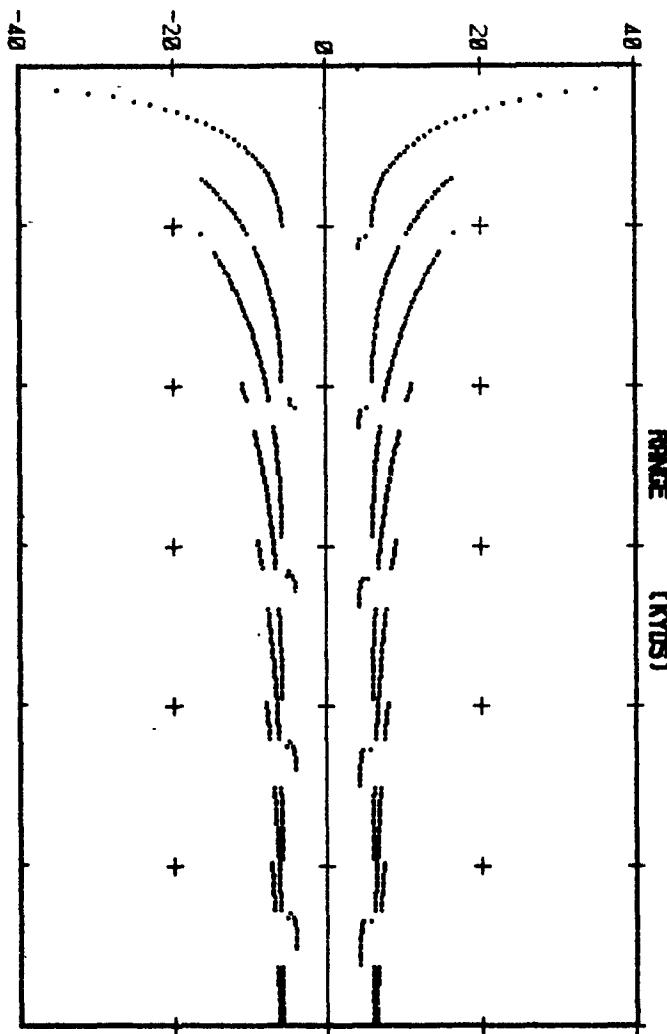


LRAPP

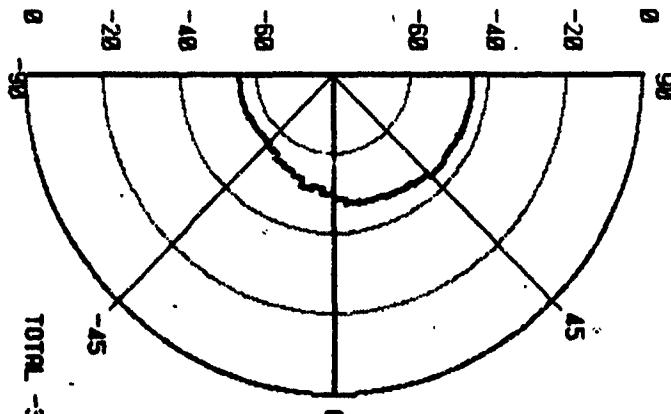
DEPTH IN METERS



ARRIVAL ANGLE

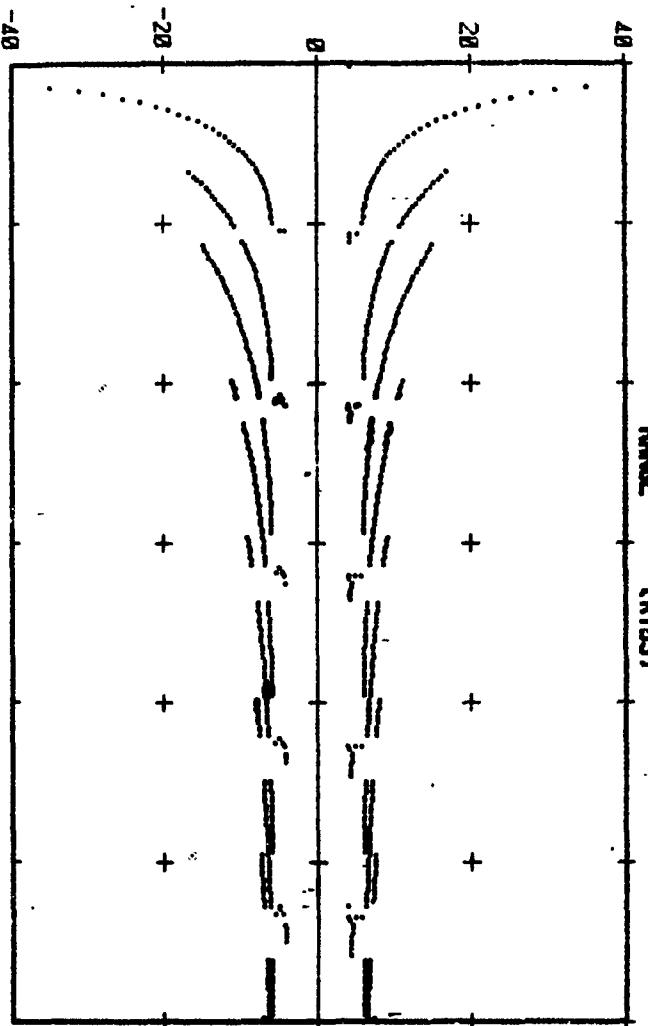


NOISE (DB)

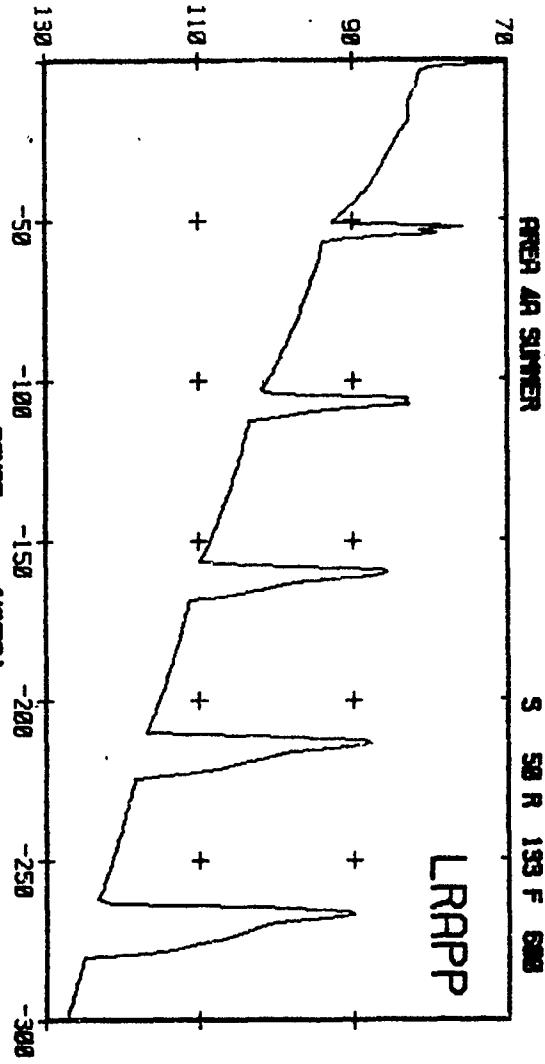


TOTAL -37.1 DB

ARRIVAL ANGLE

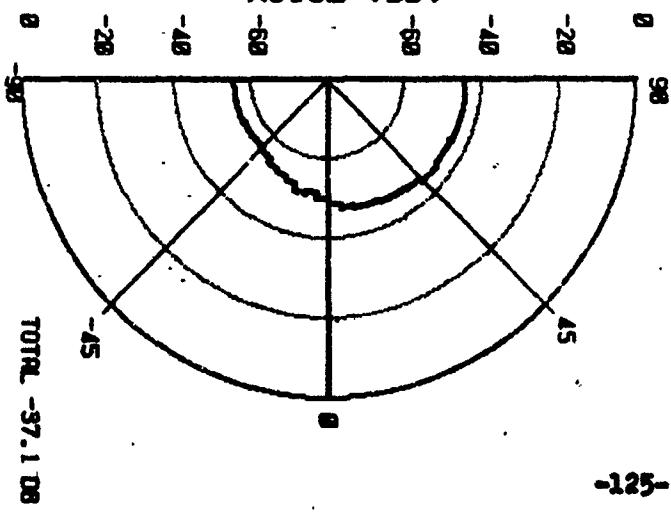


DB LOSS

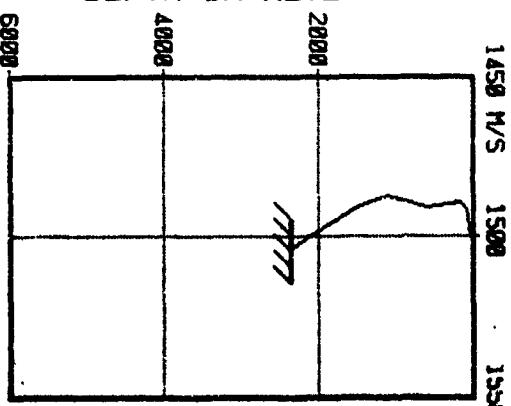


ATR 4R SIMMER
S 58 R 153 F 688
LRAPP

NOISE (DB)

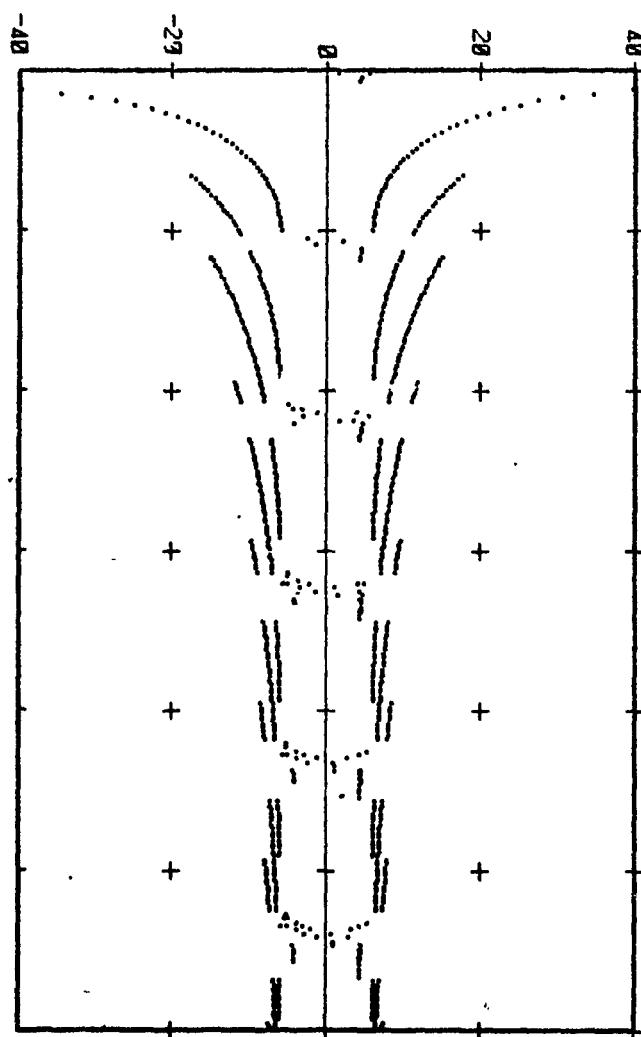


DEPTH IN METERS

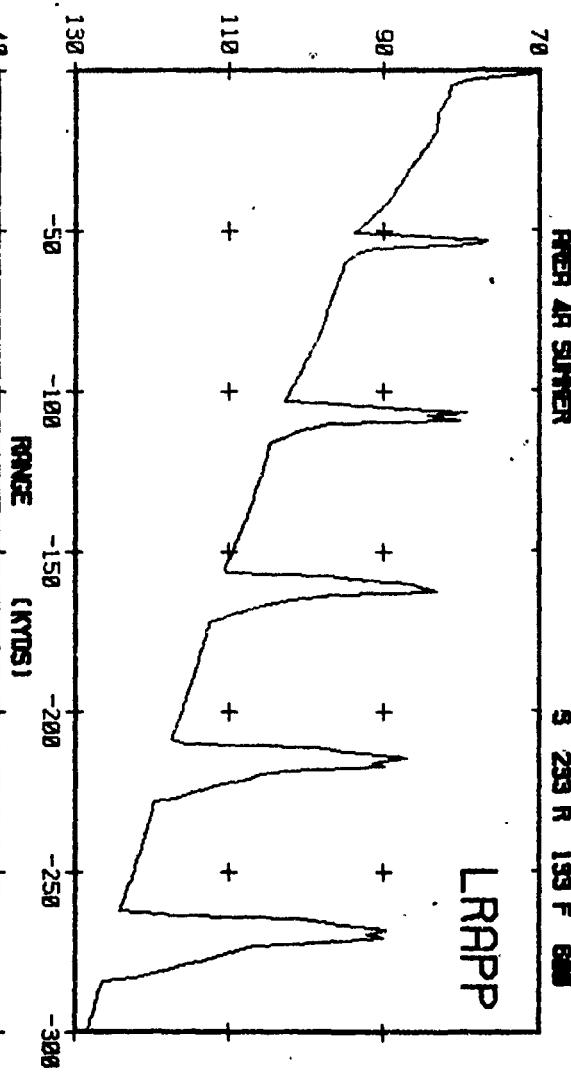


1450 m/s 1500 1550

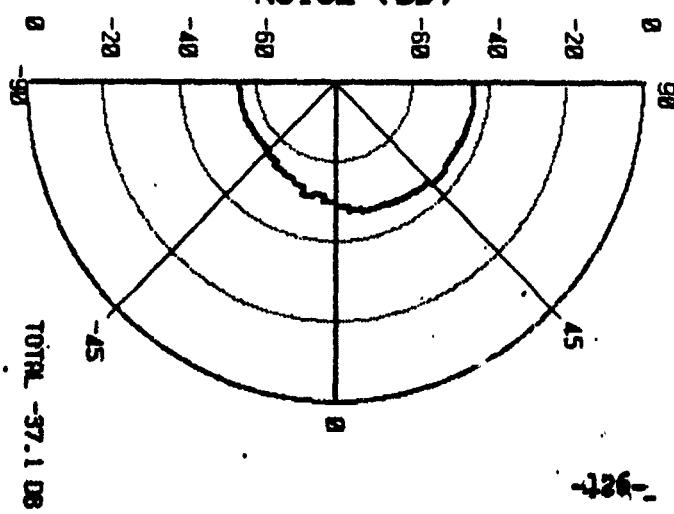
ARRIVAL ANGLE



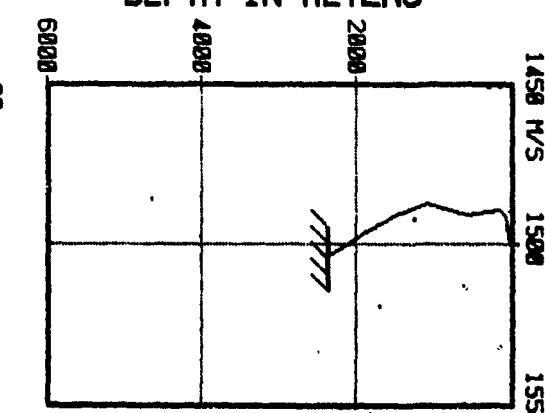
DB LOSS



NOISE (DB)



DEPTH IN METERS



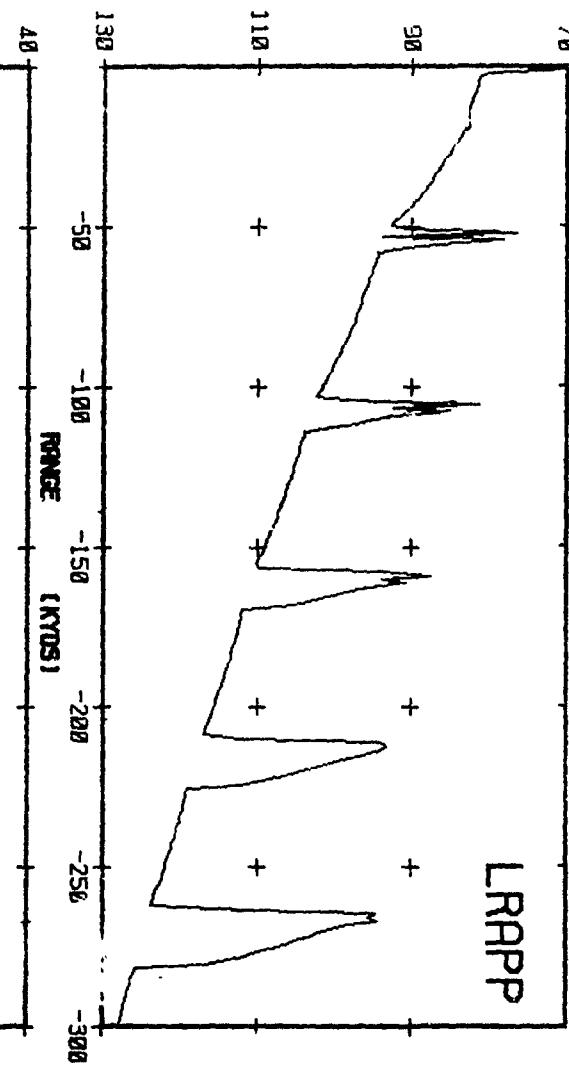
70

AREA 4A SUMMER

S 20 R 300 F 600

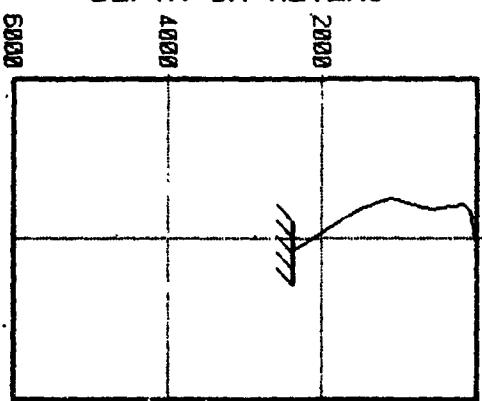
1459 M/S 1500 1550

DB LOSS

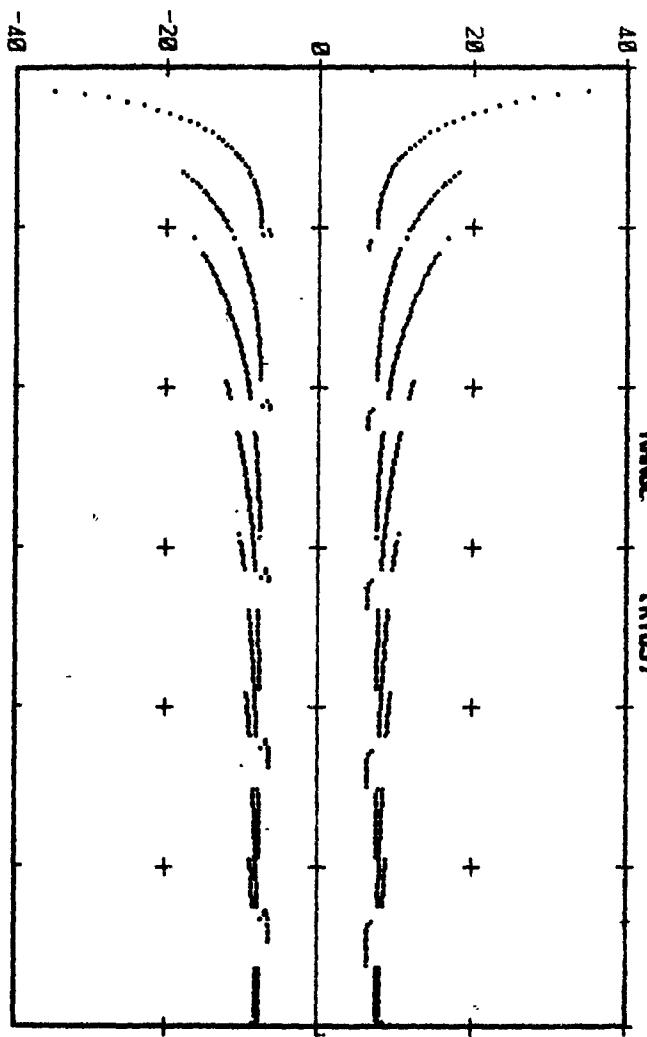


LRAPP

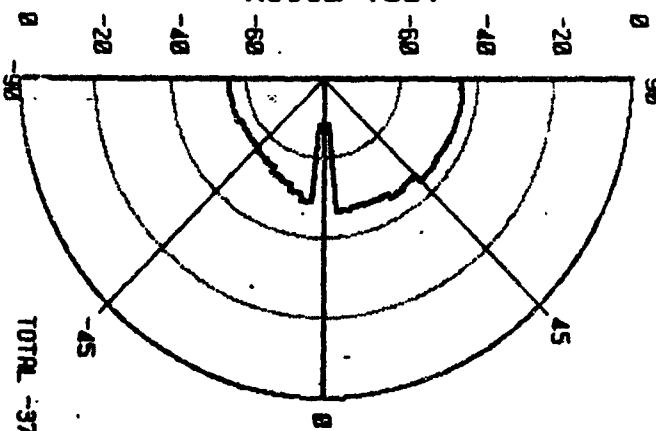
DEPTH IN METERS



ARRIVAL ANGLE

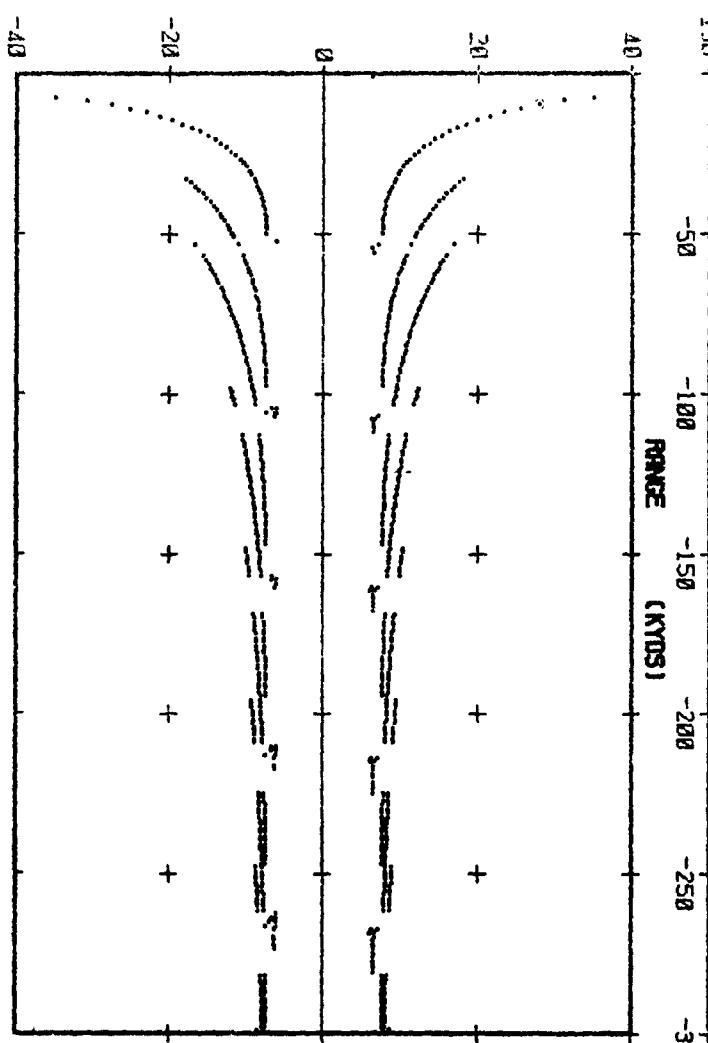


NOISE (DB)

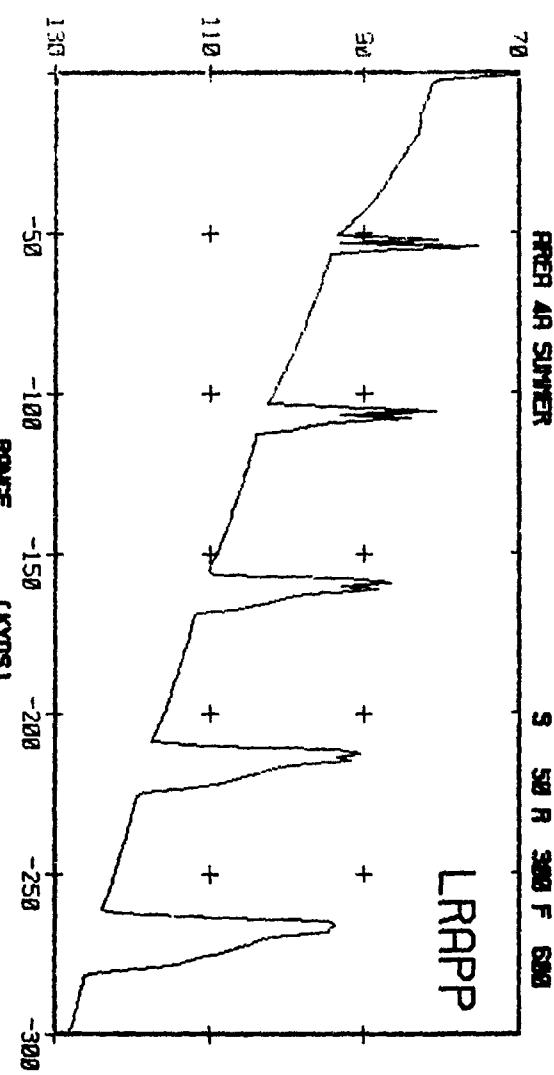


TOTAL -37.3 DB

ARRIVAL ANGLE

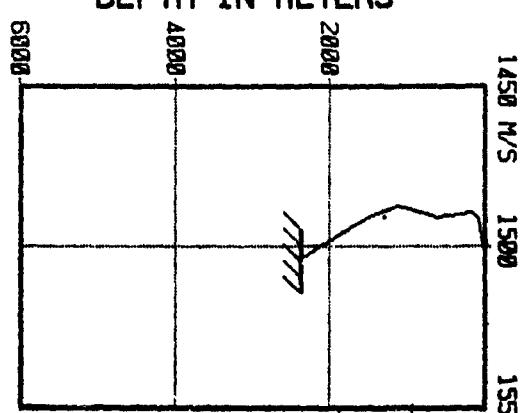


DB LOSS

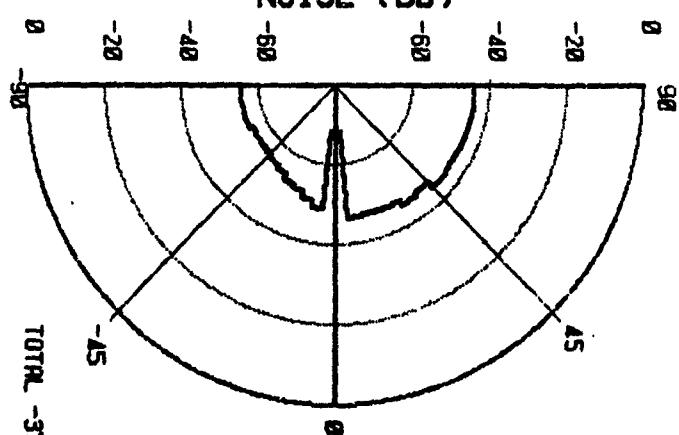


LRAAPP

DEPTH IN METERS



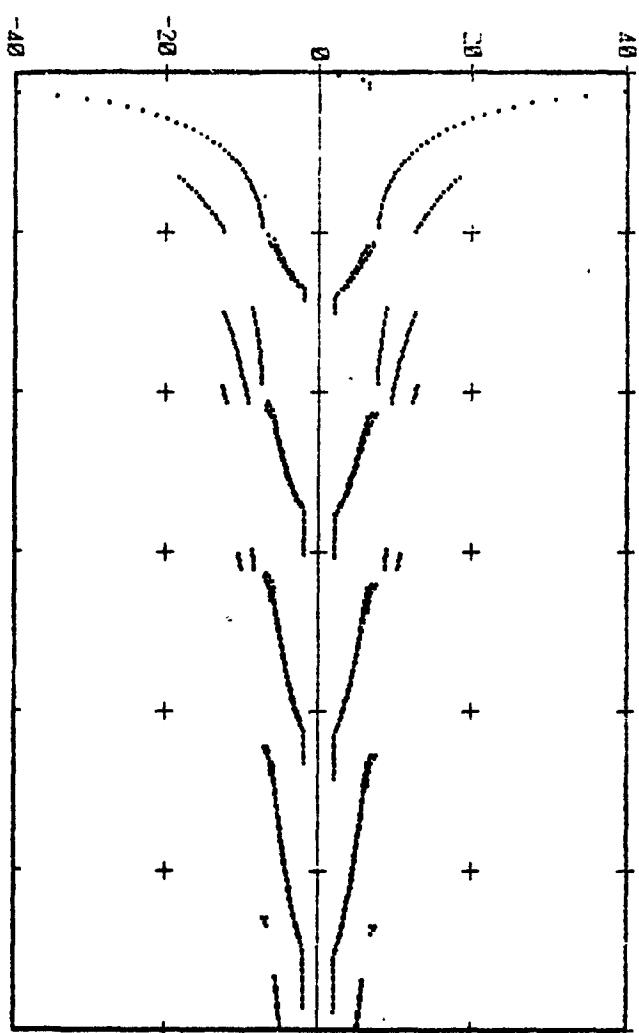
NOISE (DB)



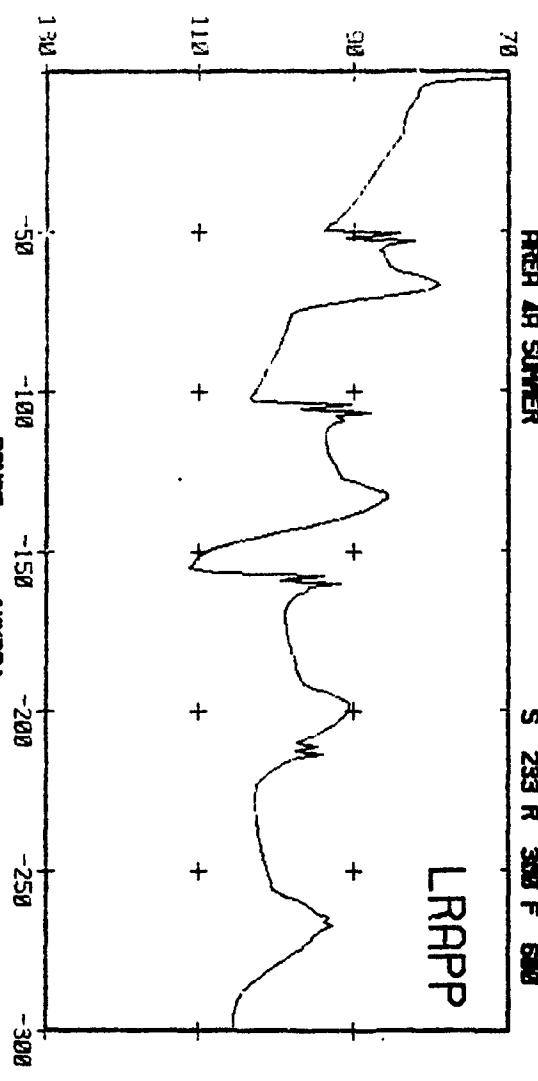
TOTAL -37.3 DB

- -

ARRIVAL ANGLE



DB LOSS



70

ARR ARR SIMMER

S 233 R 300 F 500

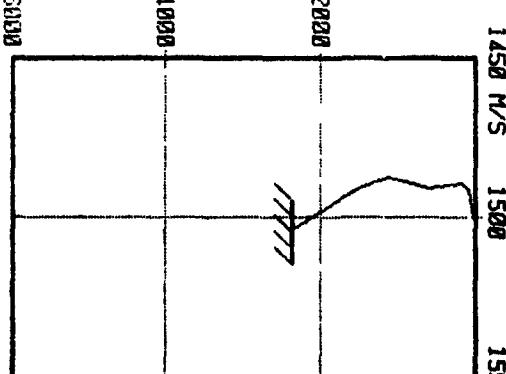
LRAFP

1450 M/S

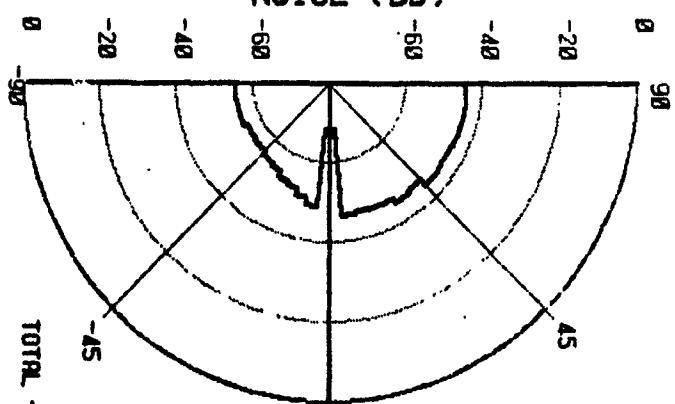
1500

1550

DEPTH IN METERS



NOISE (DB)



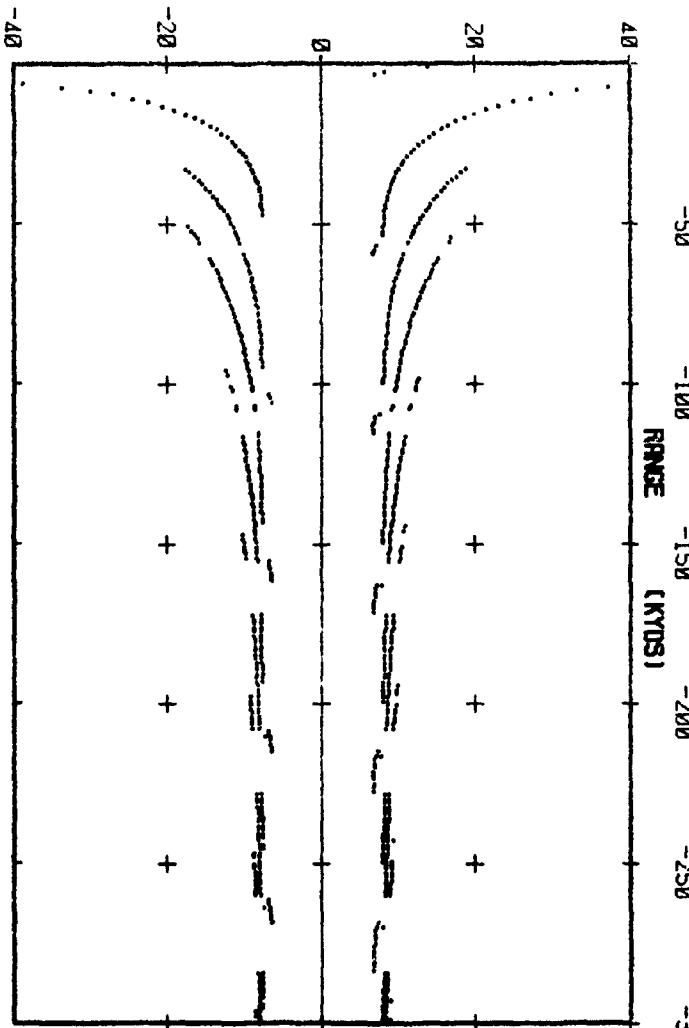
TOTAL -37.3 DB

AREA 4R SUMMER

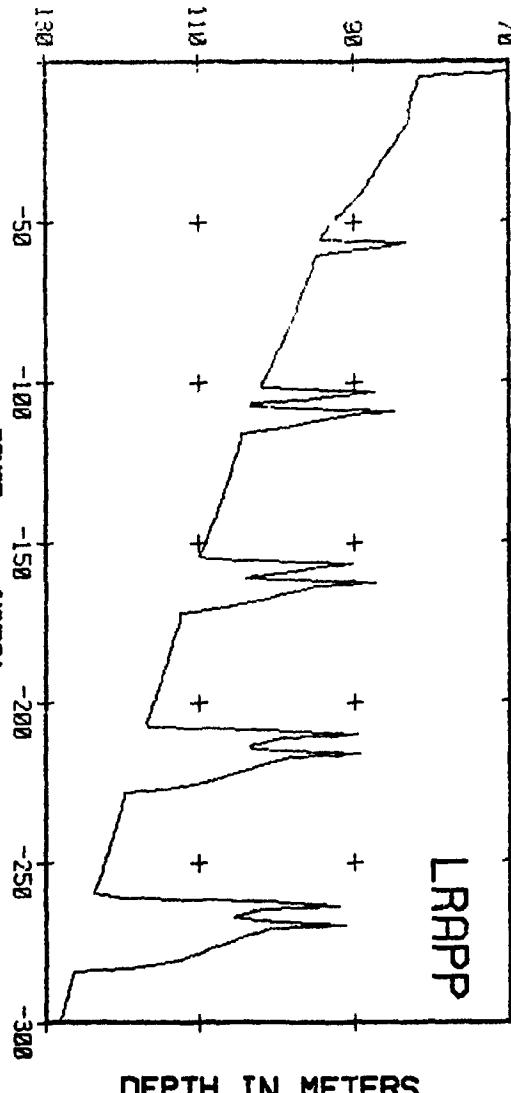
S 20 R 1000 F 600

1450 M/S 1500 1550

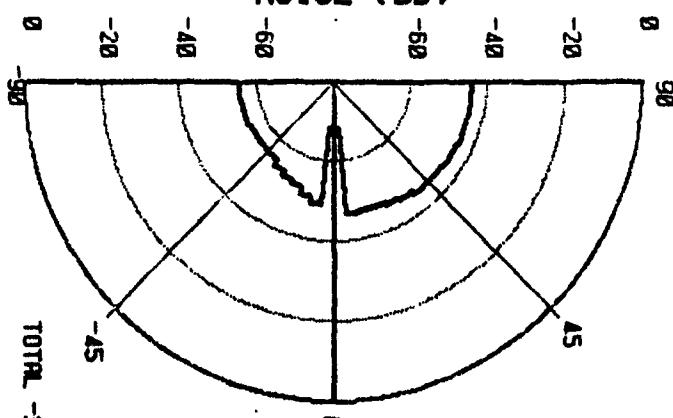
ARRIVAL ANGLE



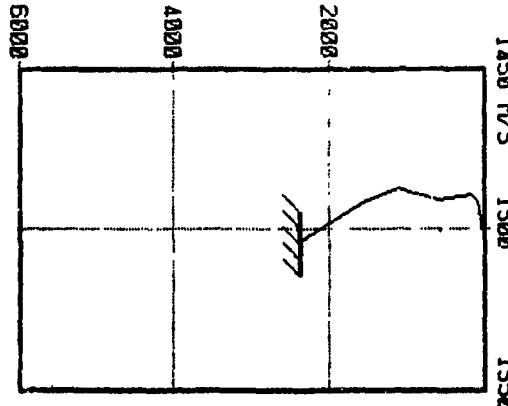
DB LOSS



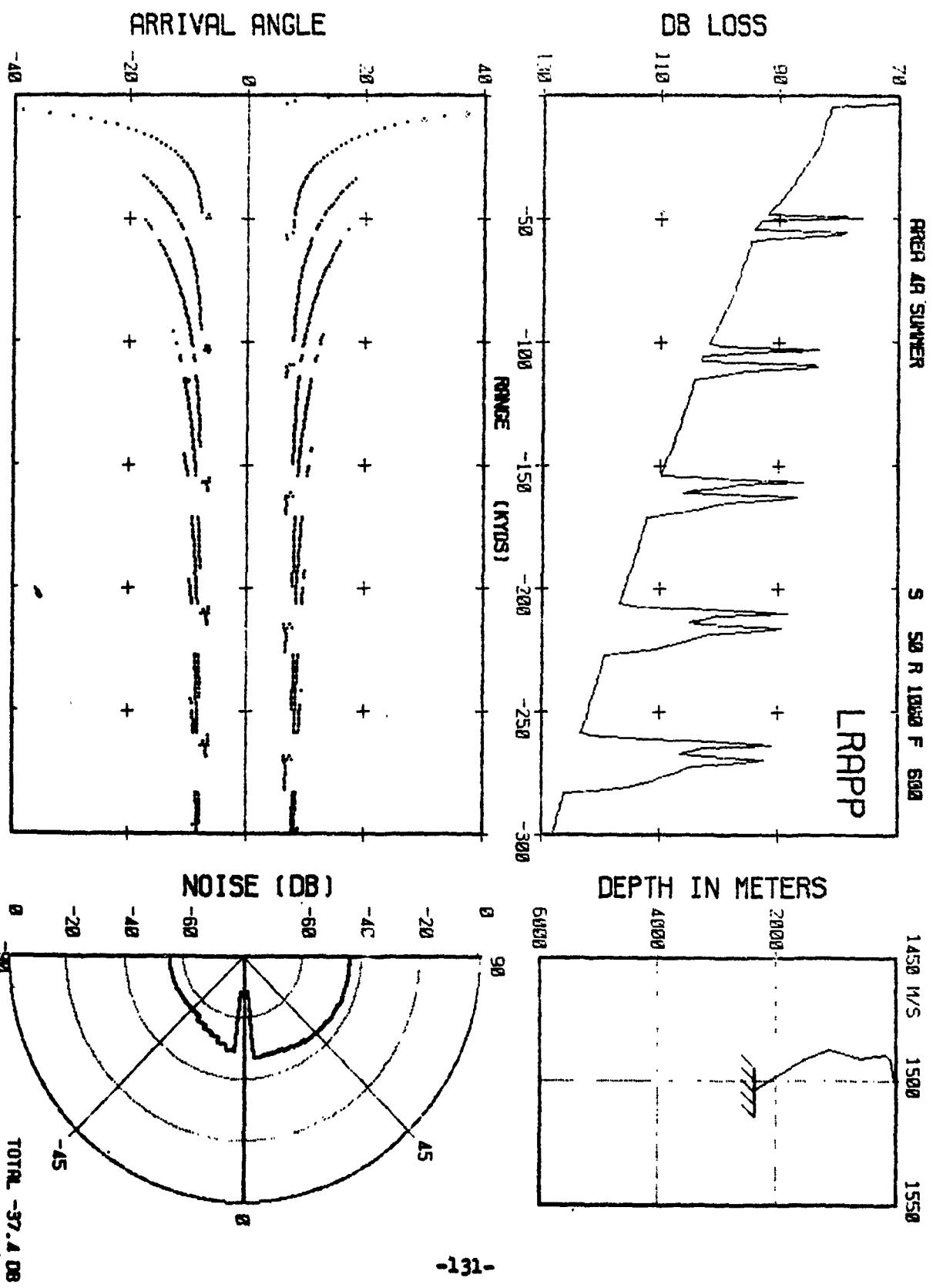
NOISE (DB)



DEPTH IN METERS



TOTAL -37.4 DB

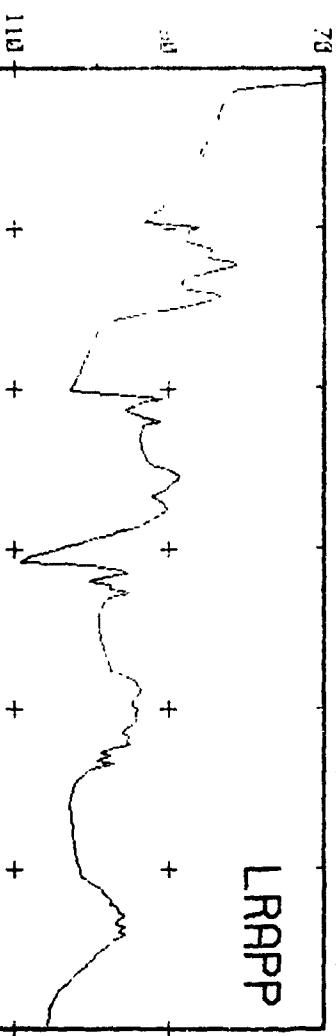


AREA 4R SUMMER

S 233 R 1000 F 600

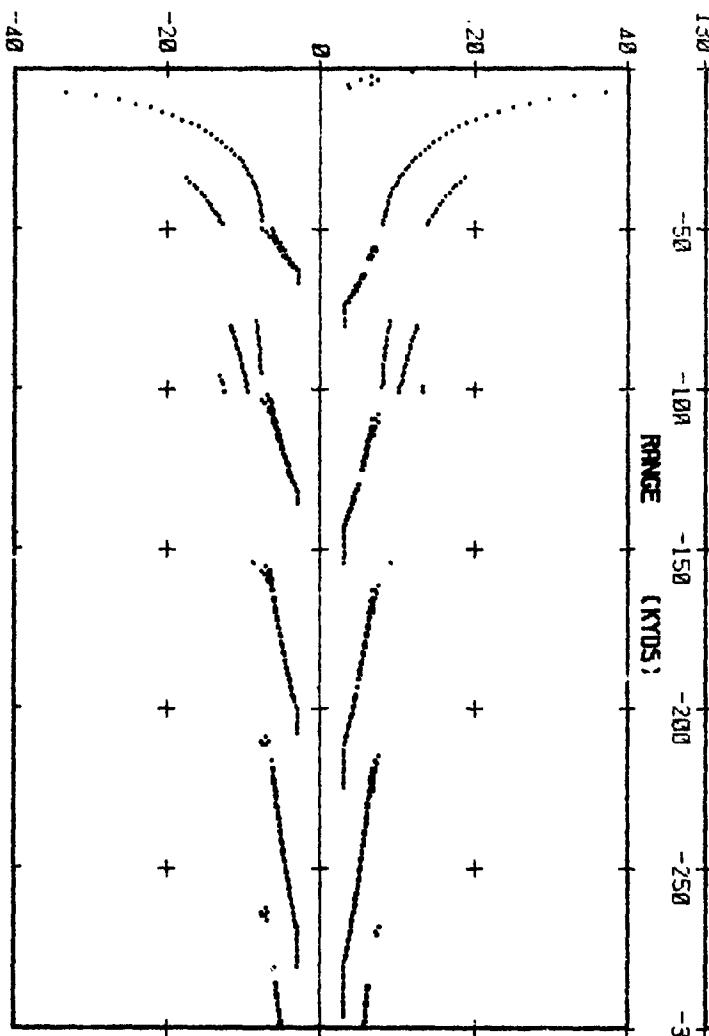
1450 M/S 1500 1550

DB LOSS

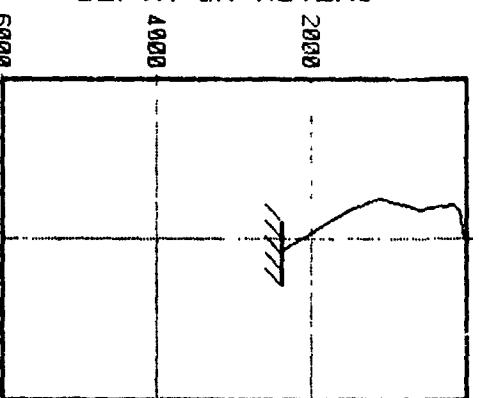


LRAFP

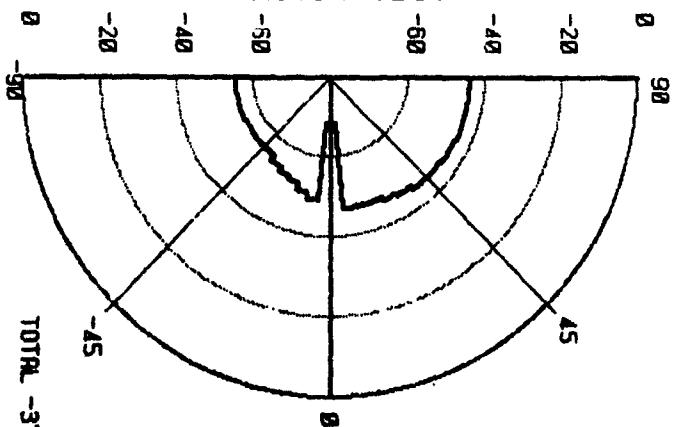
ARRIVAL ANGLE



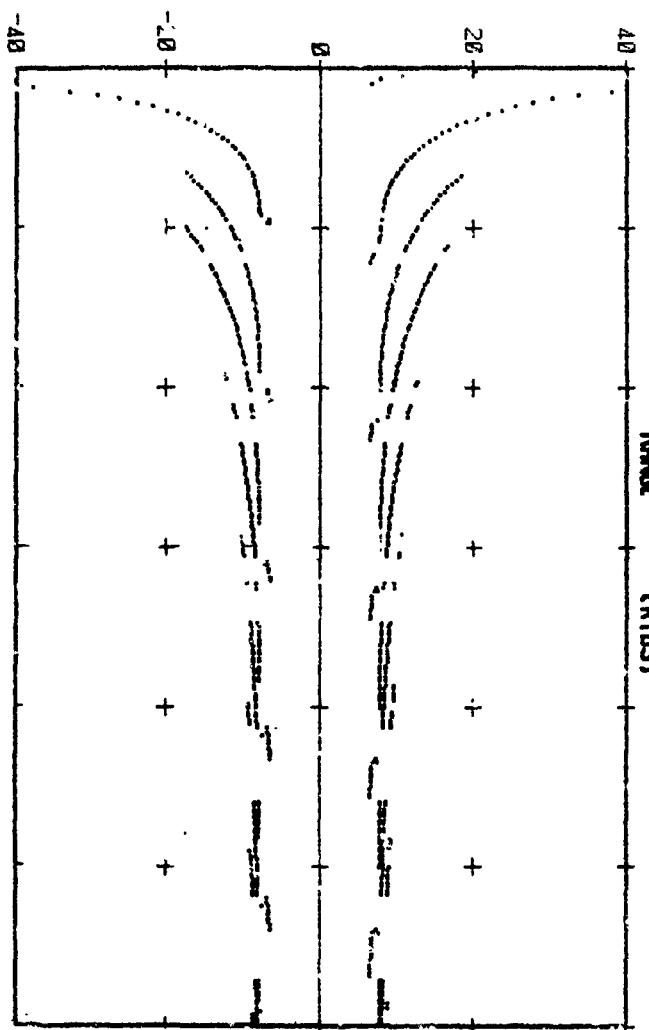
DEPTH IN METERS



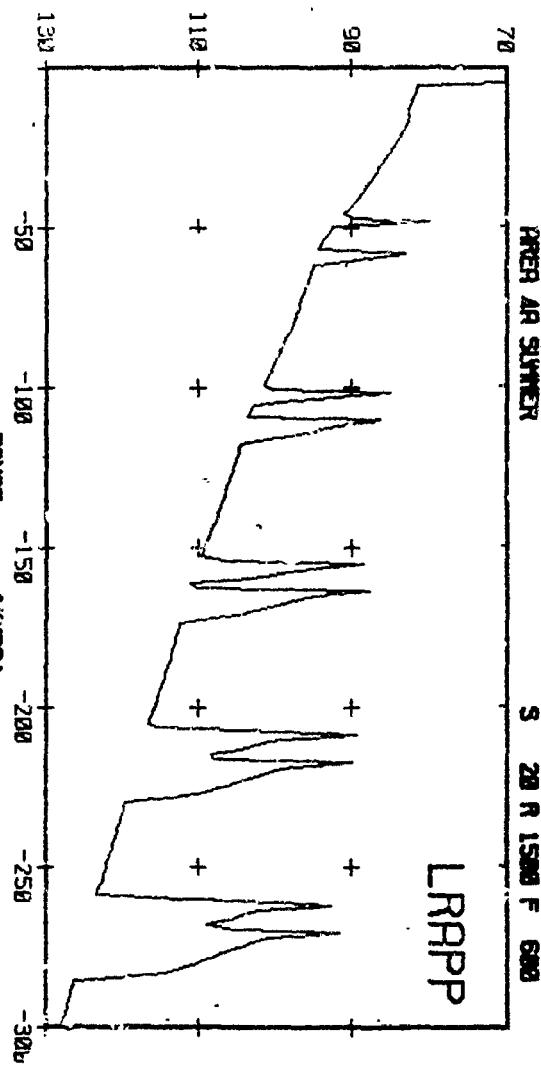
NOISE (DB)



ARRIVAL ANGLE

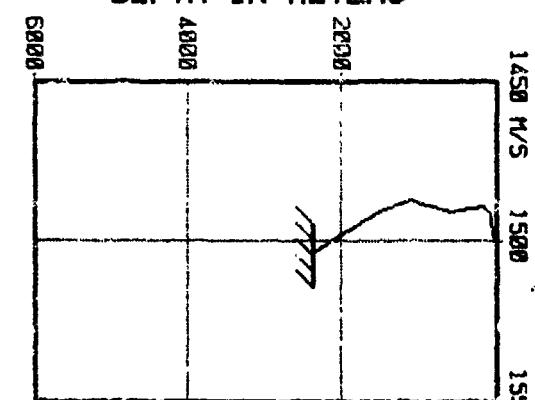


DB LOSS



L RAPP

DEPTH IN METERS

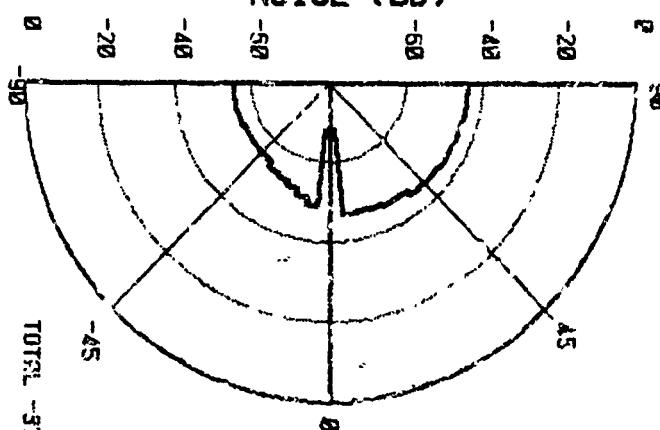


PAPER AIR SUMMER

S 28 R 1500 F 600

1450 M/S 1500 1550

NOISE (DB)



TOTAL -37.4 DB

70

AFTER 4R SUMMER

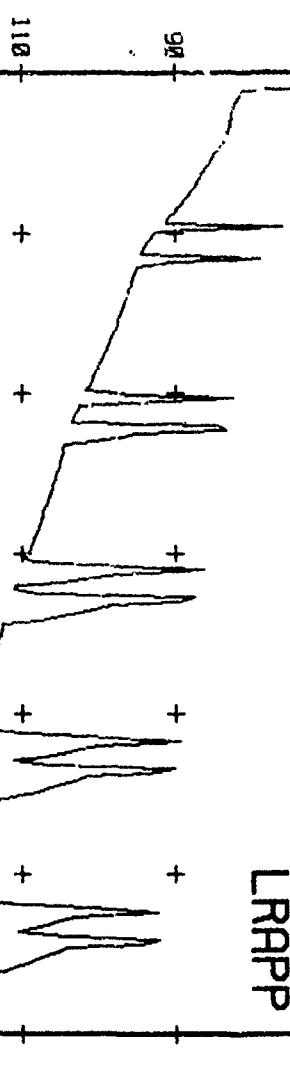
S SW R 1500 F 600

1450 M/S

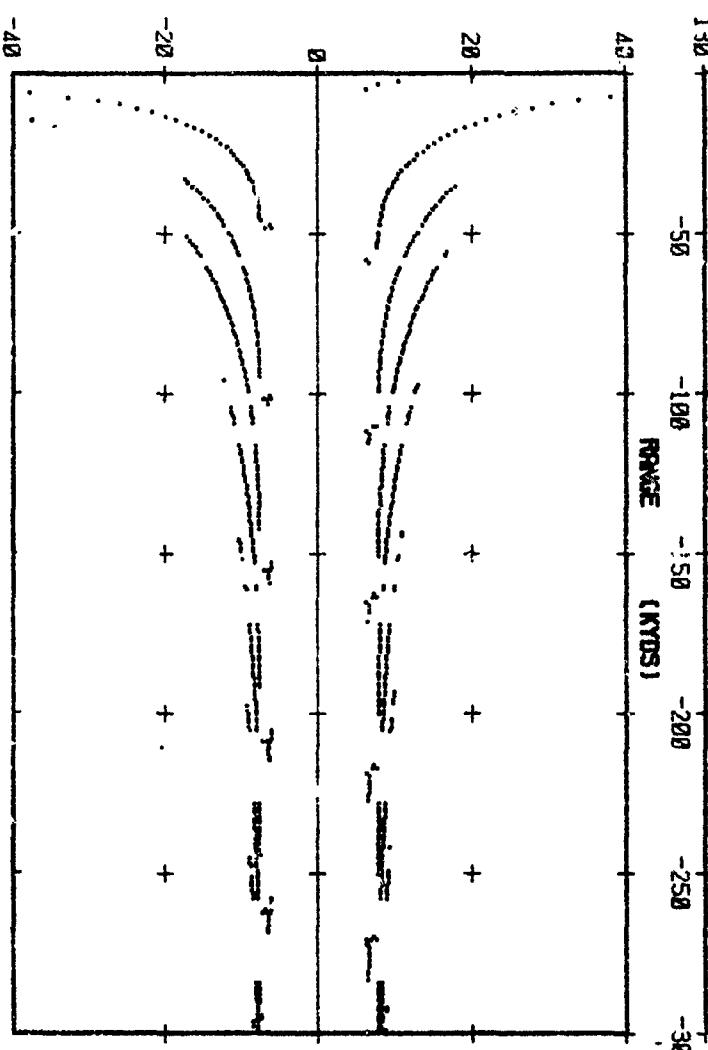
1500

1550

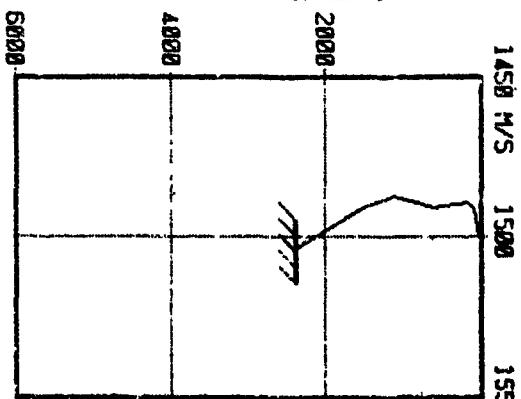
DB LOSS



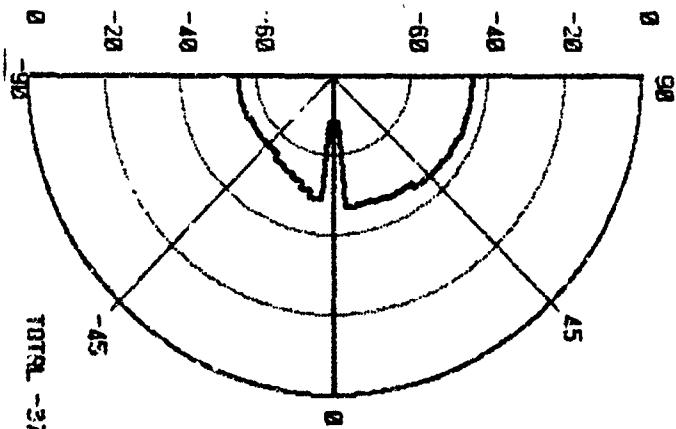
ARRIVAL ANGLE



DEPTH IN METERS

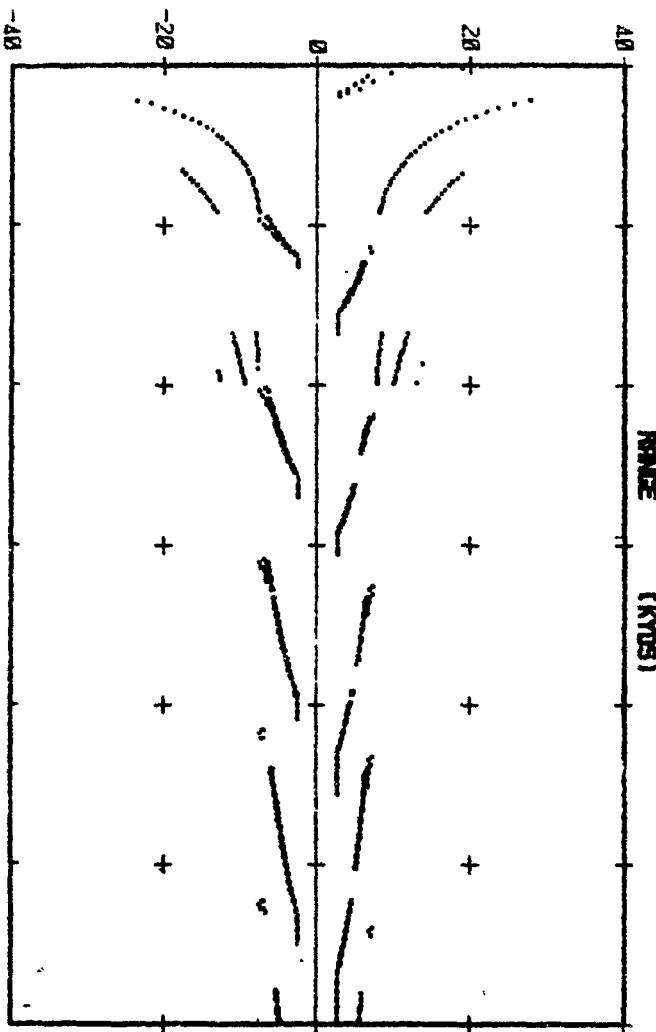


NOISE (DB)

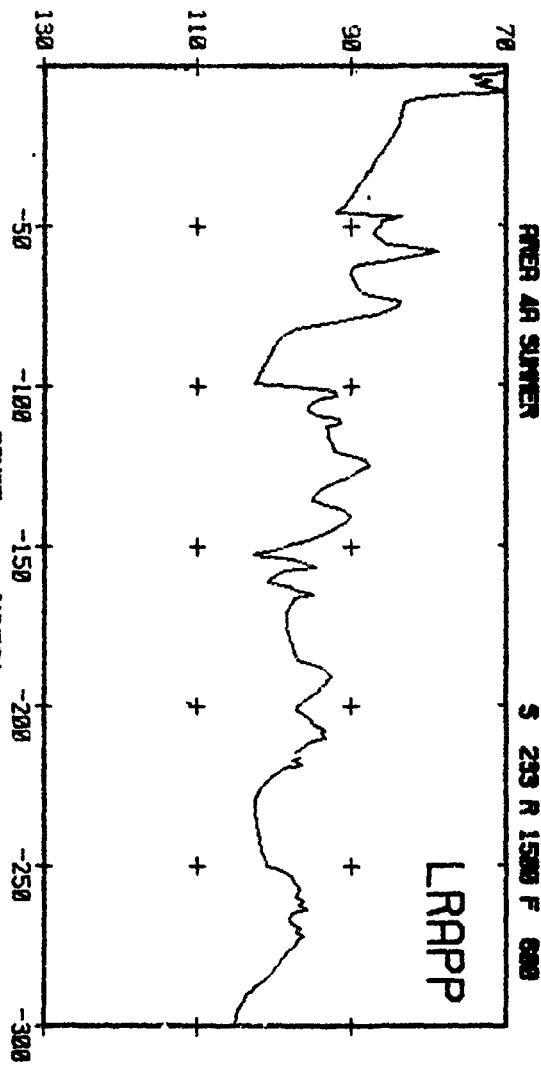


TOTAL -37.4 DB

ARRIVAL ANGLE



DB LOSS



70

FRIER AIR SUMMER
S 233 R 1500 F 600

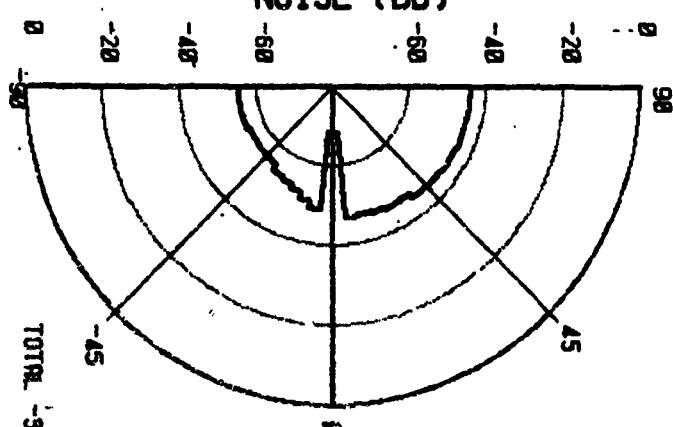
LRAPP

5 233 R 1500 F 600

1450 M/S 1500

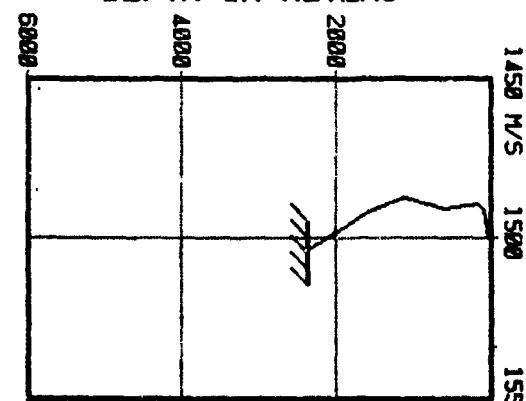
1550

NOISE (DB)



TOTAL -37.4 DB

DEPTH IN METERS

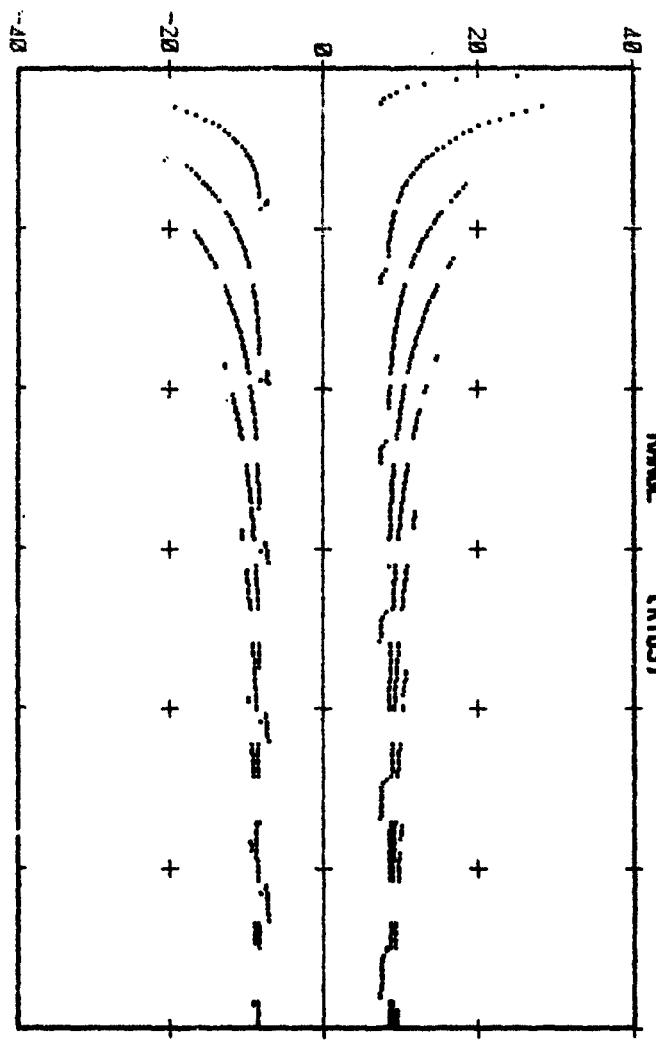


6000

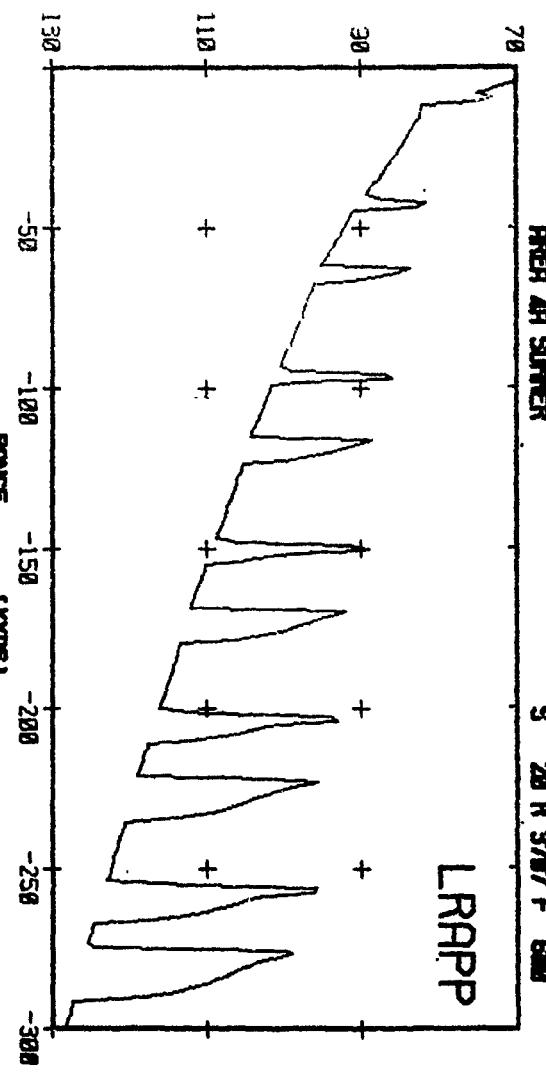
4000
2000

1500

ARRIVAL ANGLE



DB LOSS



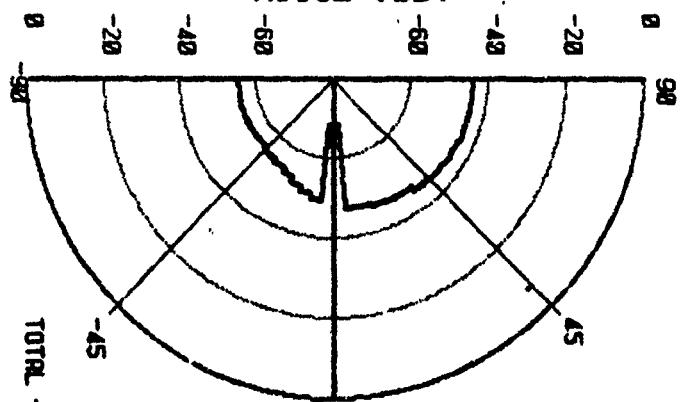
78

PTR 4A SUMMER

S 28 R 37W F 600

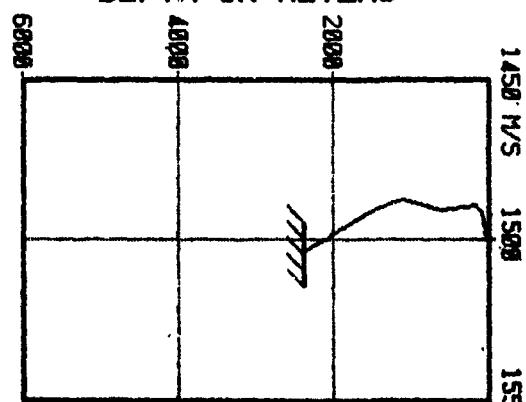
LRAAPP

NOISE (DB)



TOTAL -37.4 dB

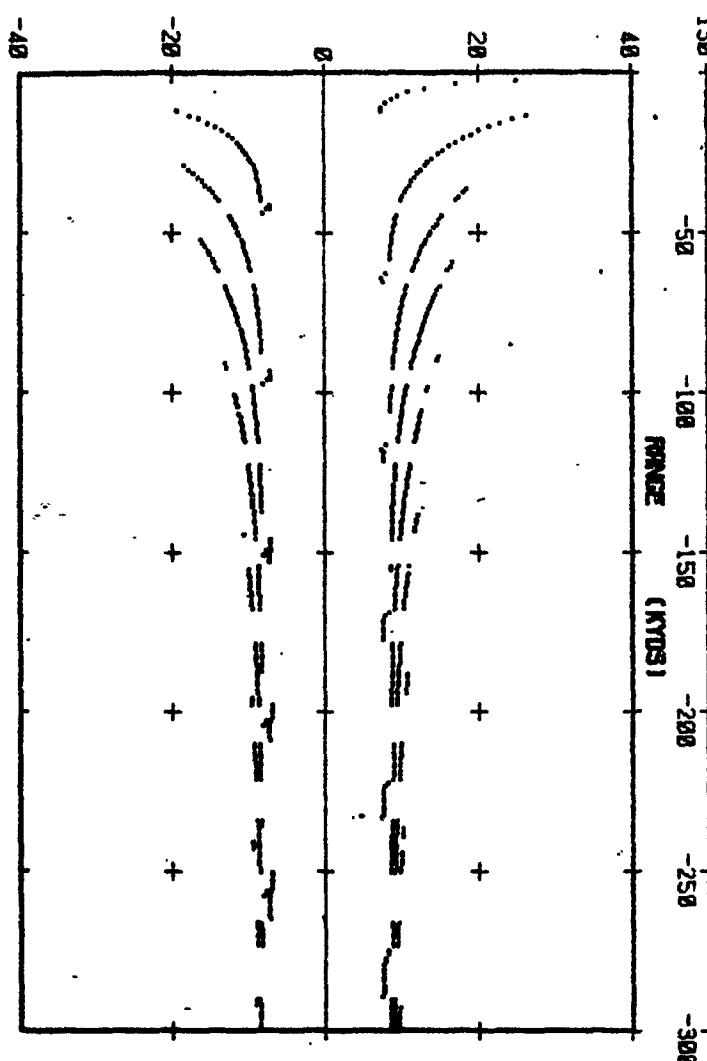
DEPTH IN METERS



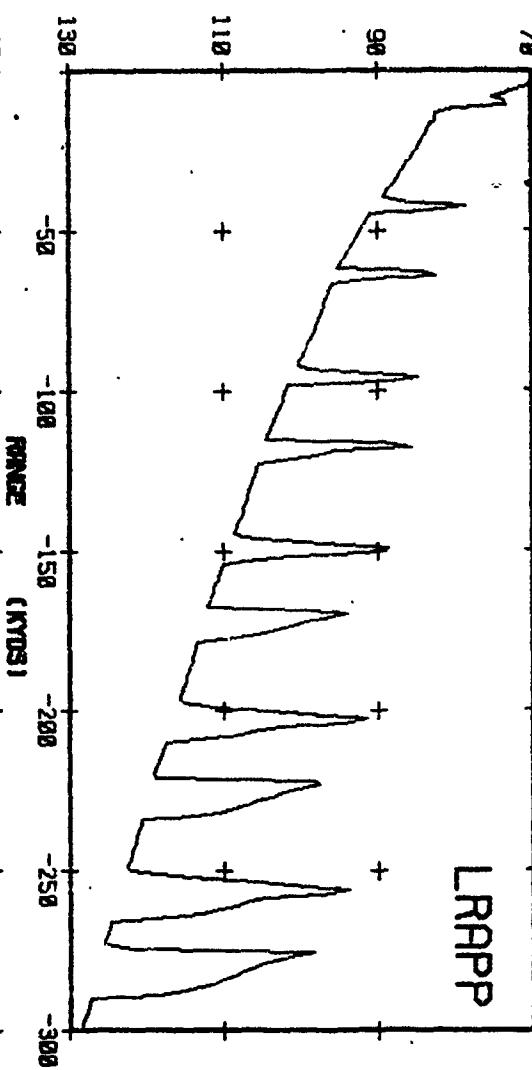
1450 M/S 1500 1550

— —

ARRIVAL ANGLE



DB LOSS



L RAPP

FREQUENCIES

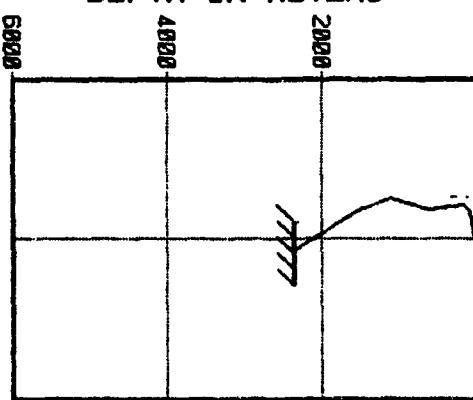
S S R 3707 F 688

1450 HZ

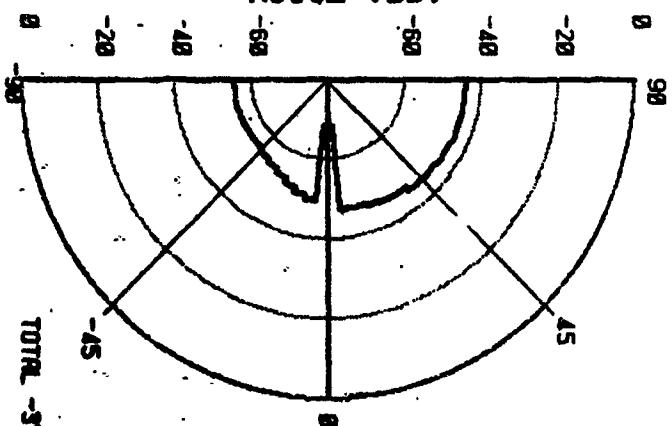
1500

1550

DEPTH IN METERS



NOISE (DB)



TOTAL -37.4 dB

70

PACIFIC SUMMER

S 233 R 377 F 600

1458 M/S 1500 1558

DB LOSS

110

100

90

80

70

60

50

40

30

20

10

0

LRAPP

DEPTH IN METERS

2000

4000

6000

8000

0

130
110
90
70
50
30
10
0

40

30

20

10

0

-10

-30

-50

-70

-90

-110

-130

-150

-170

-190

-210

-230

-250

-270

20

10

0

-10

-30

-50

-70

-90

-110

-130

-150

-170

-190

-210

-230

-250

-270

0

-10

-30

-50

-70

-90

-110

-130

-150

-170

-190

-210

-230

-250

-270

-10

-30

-50

-70

-90

-110

-130

-150

-170

-190

-210

-230

-250

-270

ARRIVAL ANGLE

-40

-20

0

20

40

60

80

100

120

140

160

180

200

220

240

260

280

300

320

340

360

380

400

NOISE (DB)

0

-20

-40

-60

-80

-100

-120

-140

-160

-180

-200

-220

-240

-260

-280

-300

-320

-340

-360

-380

-400

-420

-440

-460

-480

-500

-520

-540

-560

-580

-600

-620

-640

-660

-680

-700

-720

-740

-760

-780

-800

-820

-840

-860

-880

-900

-920

-940

-960

-980

-1000

-1020

-1040

-1060

-1080

-1100

-1120

-1140

-1160

-1180

-1200

-1220

-1240

-1260

-1280

-1300

-1320

-1340

-1360

-1380

-1400

-1420

-1440

-1460

-1480

-1500

-1520

-1540

-1560

-1580

-1600

-1620

-1640

-1660

-1680

-1700

-1720

-1740

-1760

-1780

-1800

-1820

-1840

-1860

-1880

-1900

-1920

-1940

-1960

-1980

-2000

-2020

-2040

-2060

-2080

-2100

-2120

-2140

-2160

-2180

-2200

-2220

-2240

-2260

-2280

-2300

-2320

-2340

-2360

-2380

-2400

-2420

-2440

-2460

-2480

-2500

-2520

-2540

-2560

-2580

-2600

-2620

-2640

-2660

-2680

-2700

-2720

-2740

-2760

-2780

-2800

-2820

-2840

-2860

-2880

-2900

-2920

-2940

-2960

-2980

-3000

-3020

-3040

-3060

-3080

-3100

-3120

-3140

-3160

-3180

-3200

-3220

-3240

-3260

-3280

-3200

-3320

-3340

-3360

-3380

-3400

-3420

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-3800

-3820

-3840

-3860

-3880

-3900

-3920

-3940

-3960

-3980

-4000

-4020

-4040

-4060

-4080

-4100

-4120

-4140

-4160

-4180

-4200

-4220

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-4340

-4360

-4380

-4400

-4420

-4440

-4460

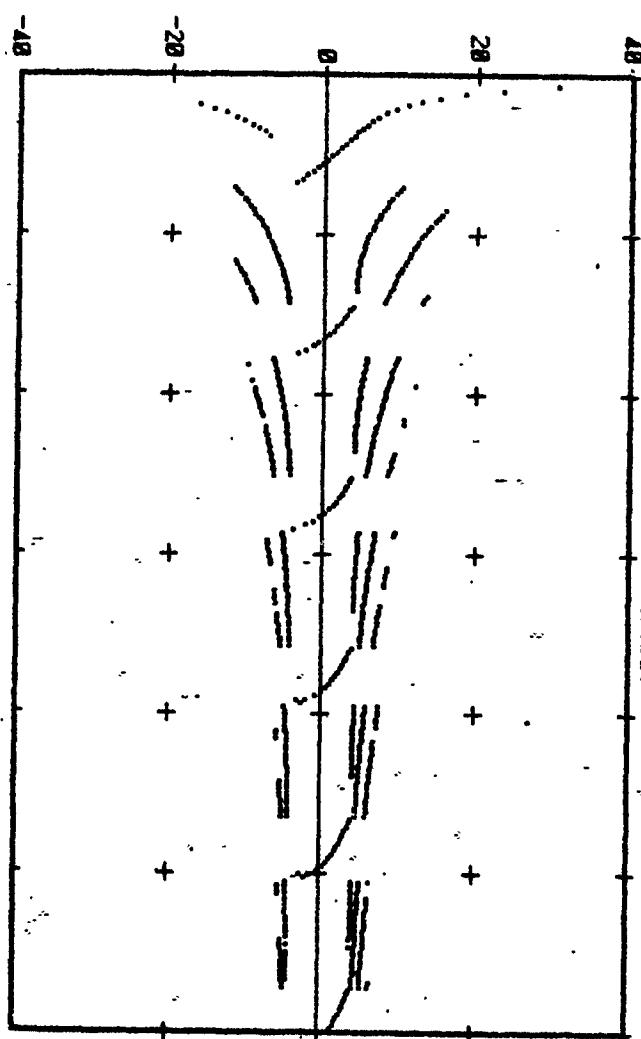
-4480

-4500

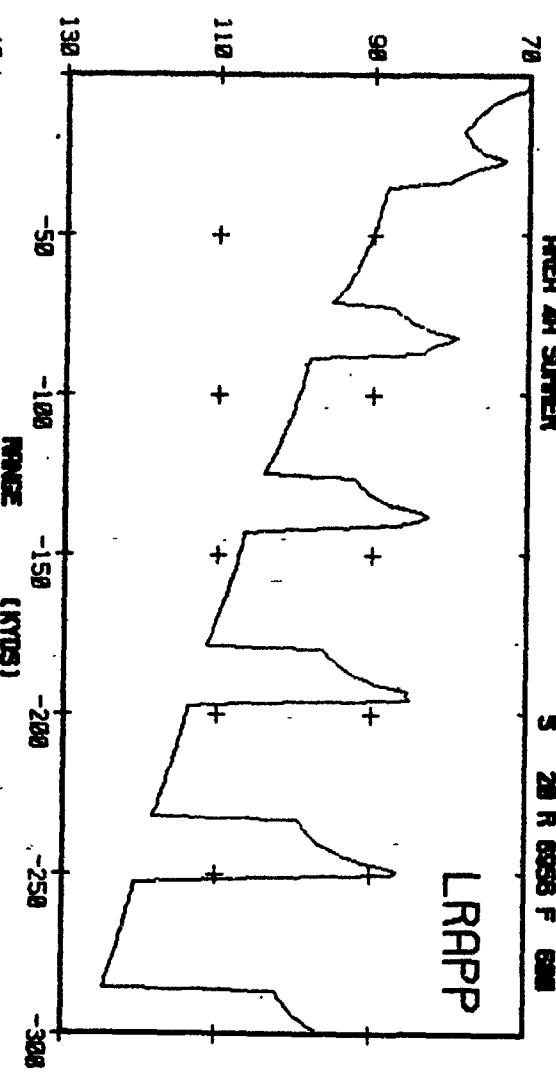
-4520

=====
=====

ARRIVAL ANGLE



DB LOSS



70

ARR 4A SUMMER

S

20

R

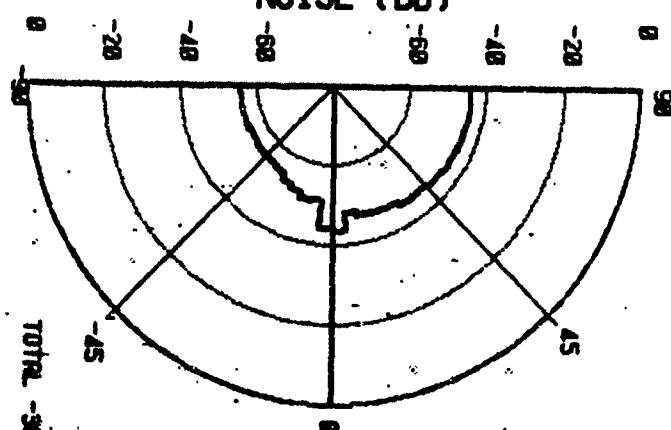
6558

F

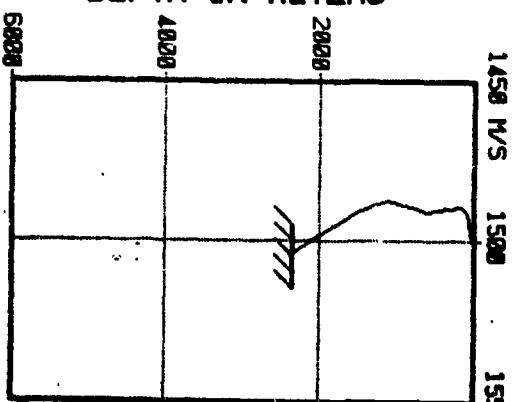
6558

LRAFP

NOISE (DB)



DEPTH IN METERS



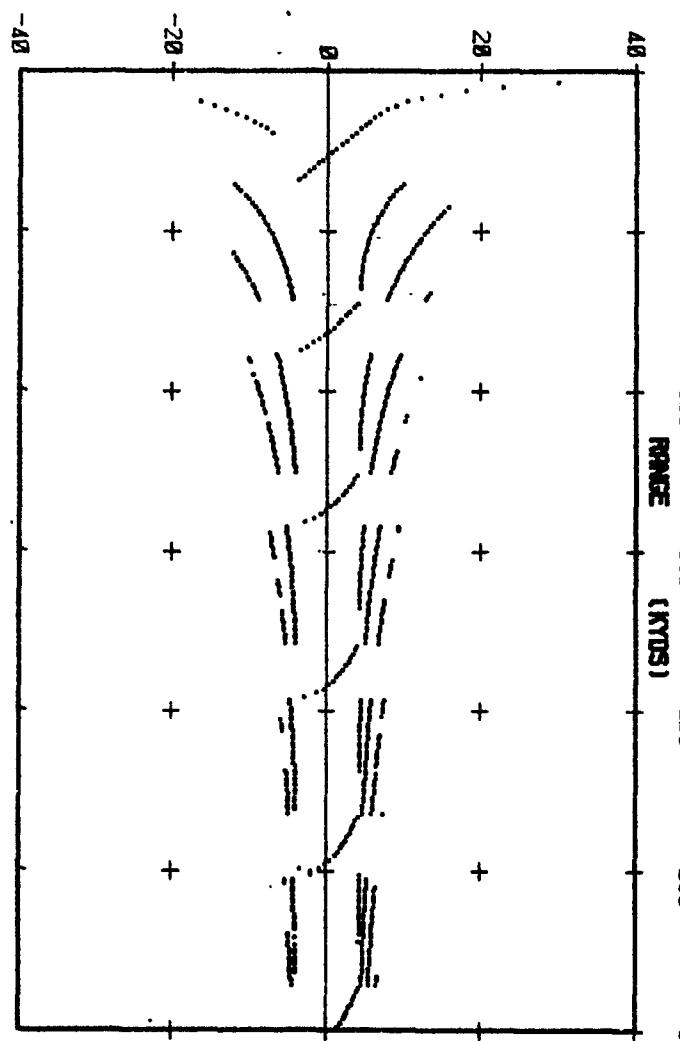
1450

M/S

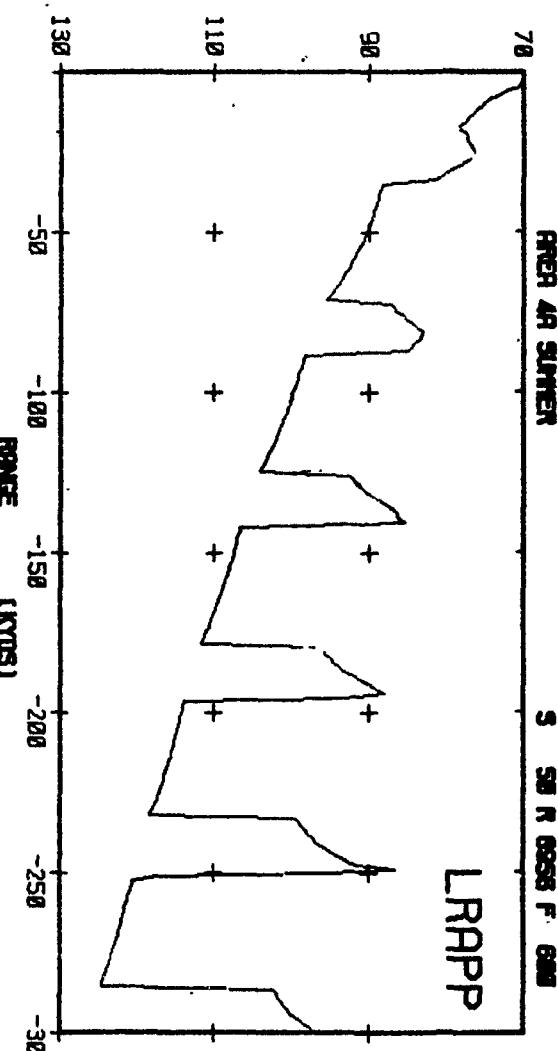
1500

1550

ARRIVAL ANGLE



DB LOSS



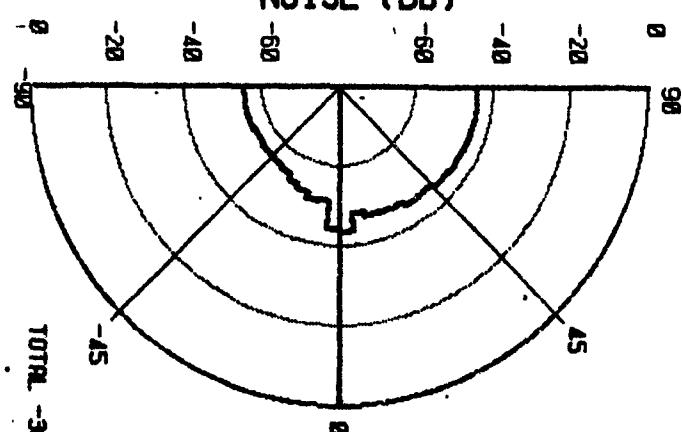
AER 4R SUMER

S 58 R 6653 F 663

LRAPP

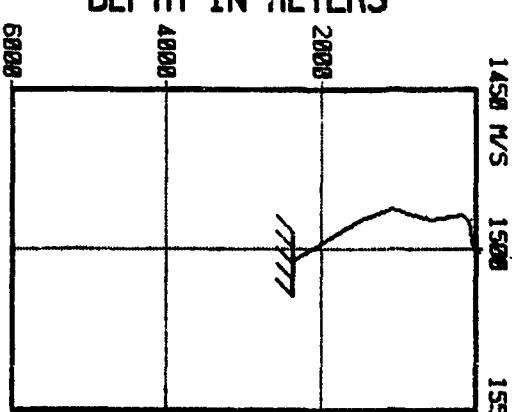
1450 1500 1550

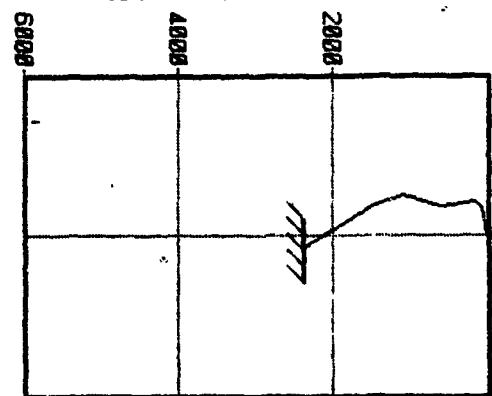
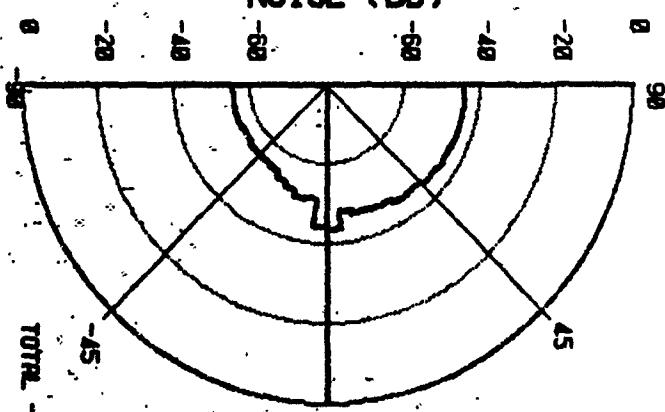
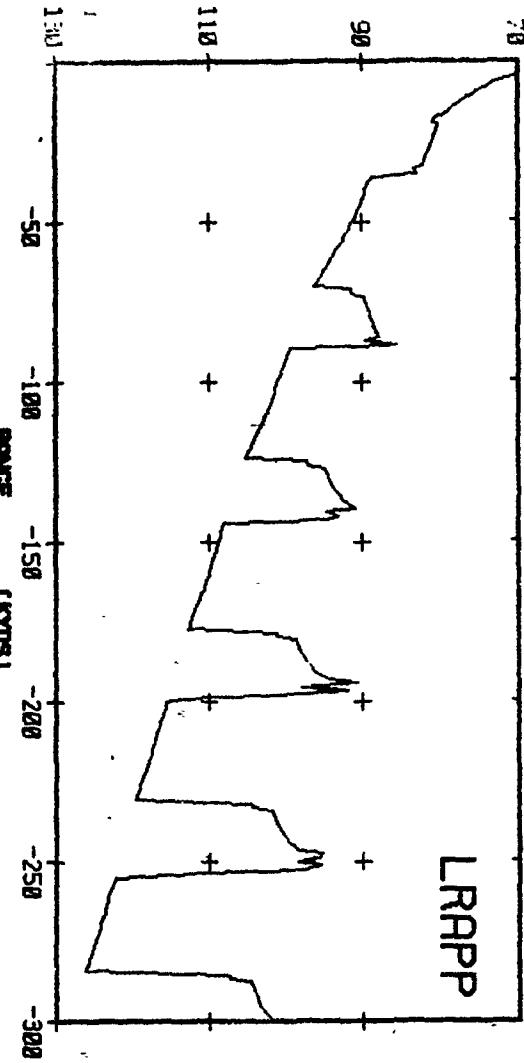
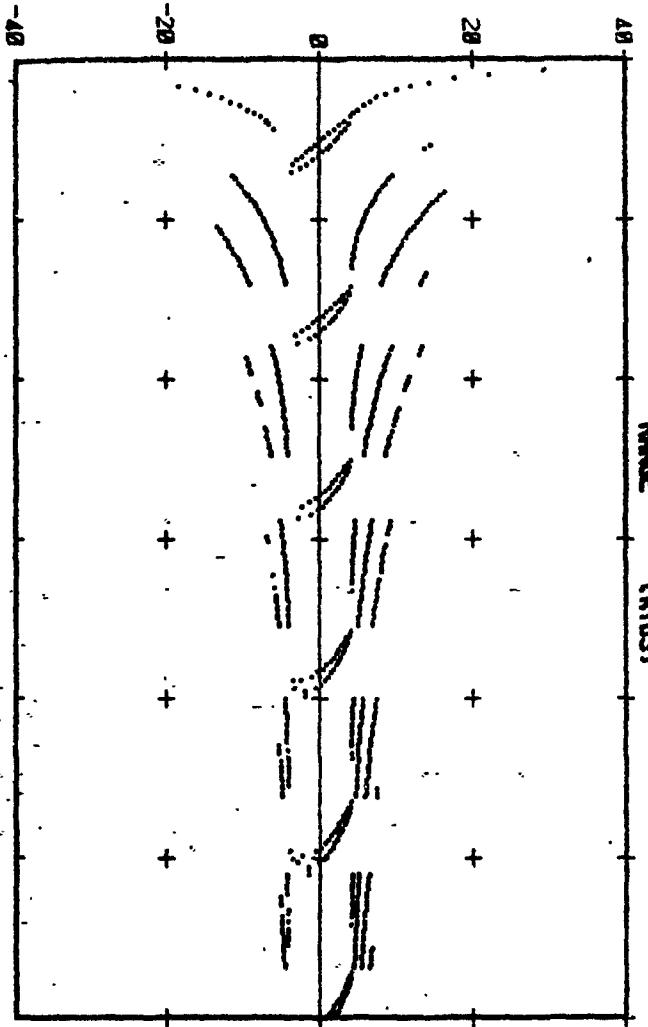
NOISE (DB)



TOTAL -36.5 DB

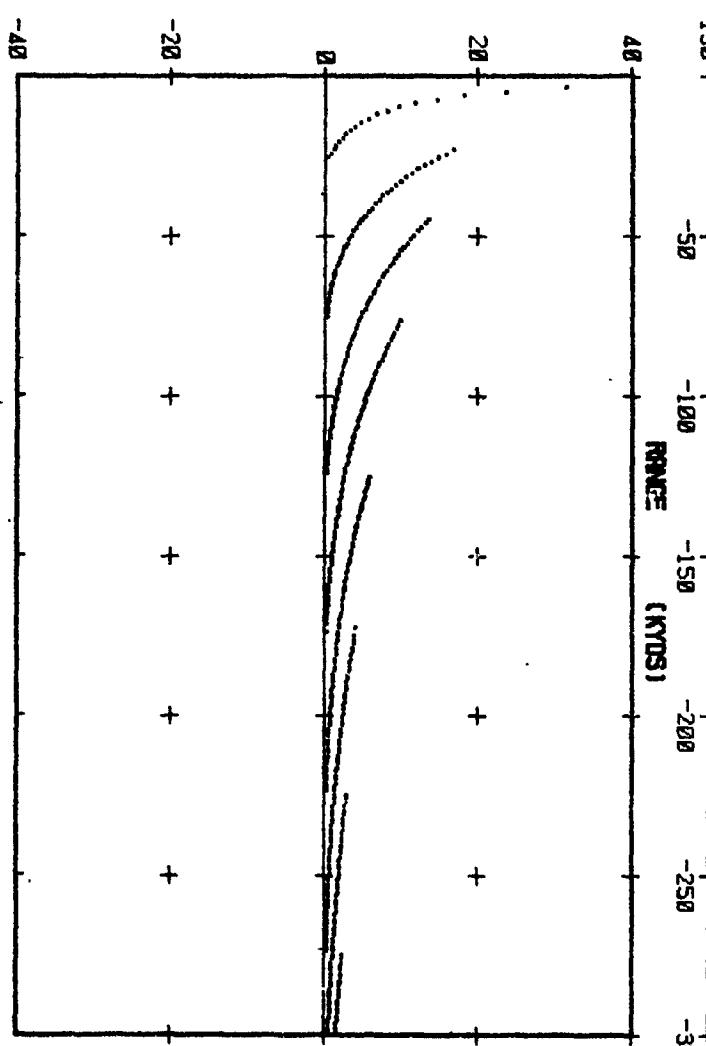
DEPTH IN METERS



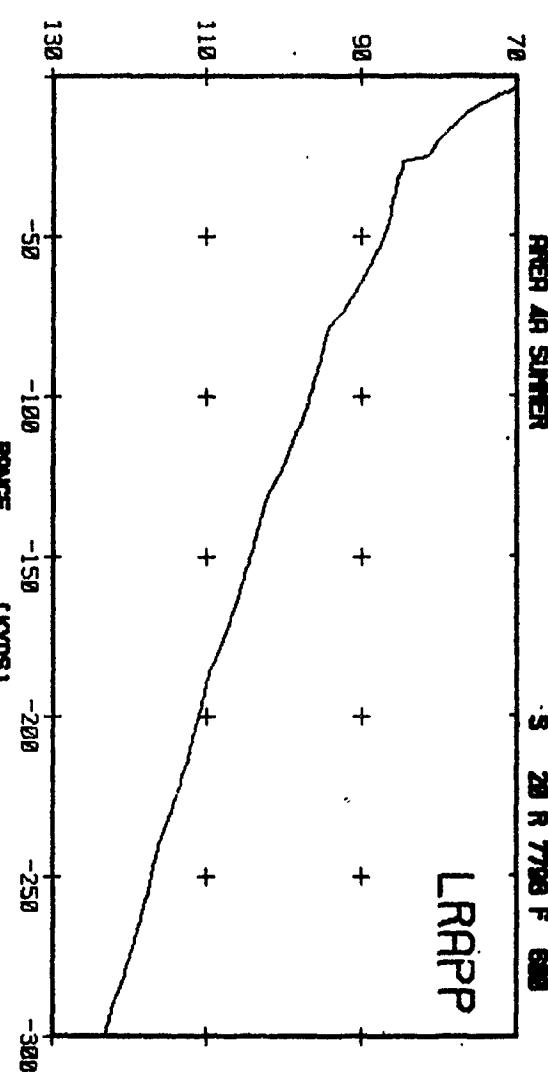


TOTAL - 35.9 86

ARRIVAL ANGLE



DB LOSS



LRAPP

AREA AR SUMMER

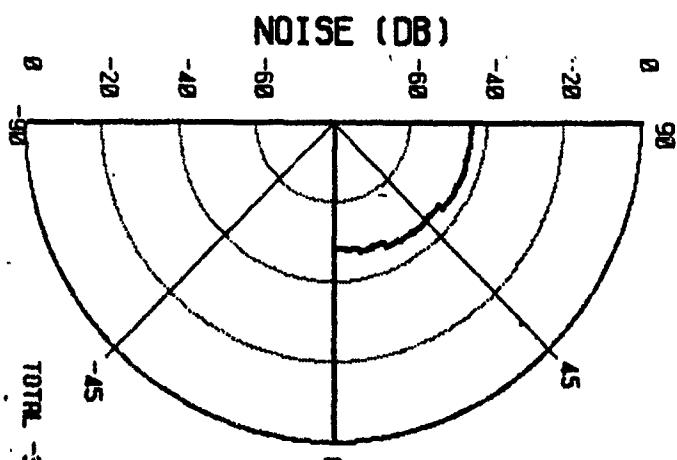
S 20 R 7708 F 600

1450 M/S

1500

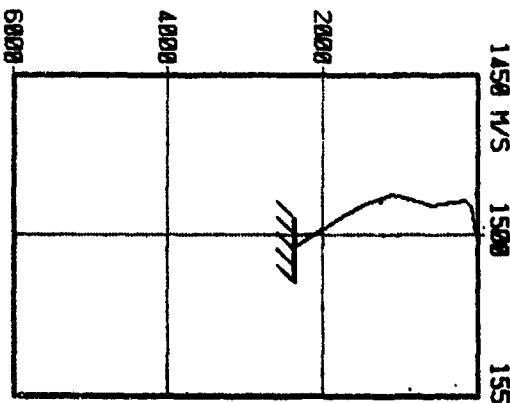
1550

NOISE (DB)



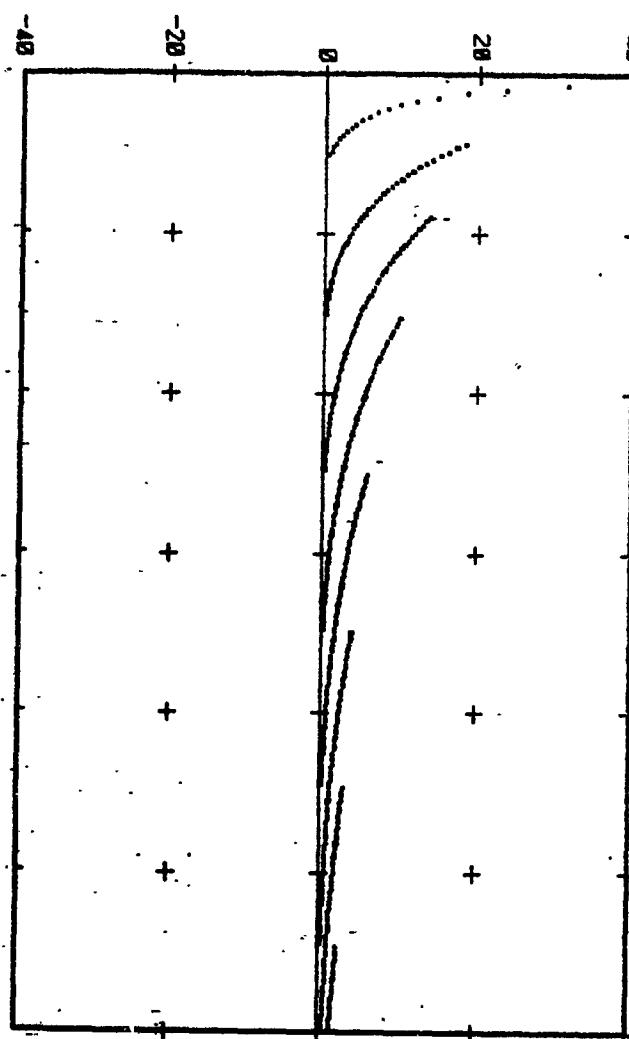
TOTAL -38.0 DB

DEPTH IN METERS

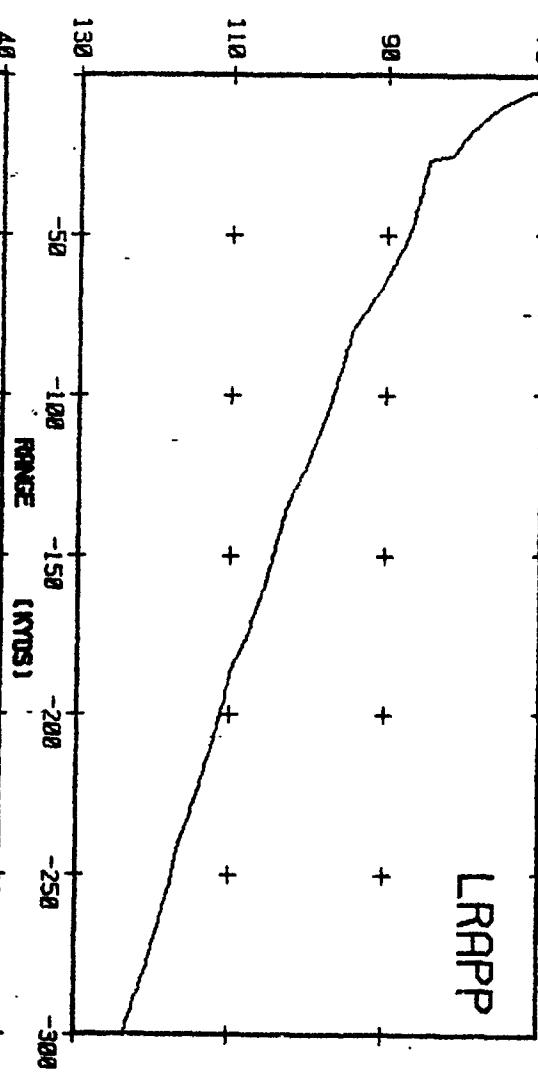


□ □ □ □ □ □ □ □ □ □ □ □ □

ARRIVAL ANGLE



DB LOSS



78

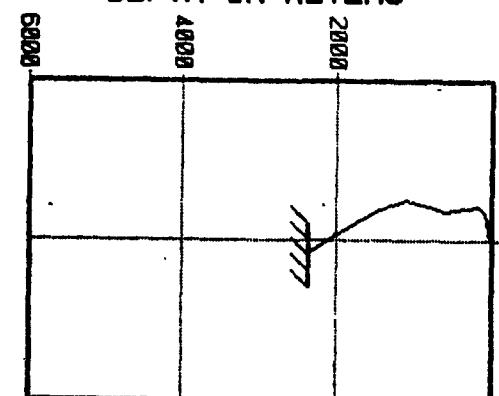
RER AR SUMMER

S SBR 7708 F 600

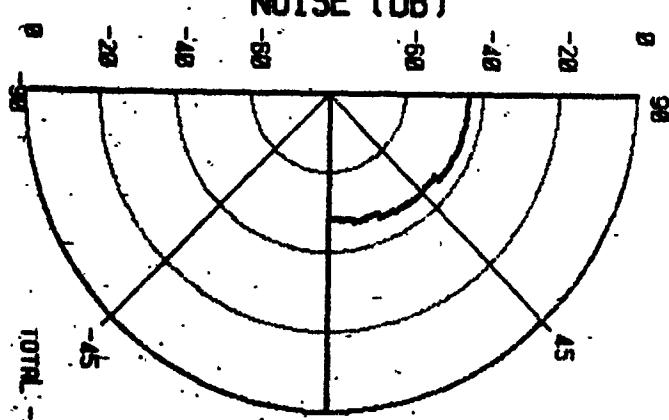
1450 M/S 1500 1550

LRAAPP

DEPTH IN METERS



NOISE (DB)



TOTAL -30.0 DB

AREA AA SUMMER

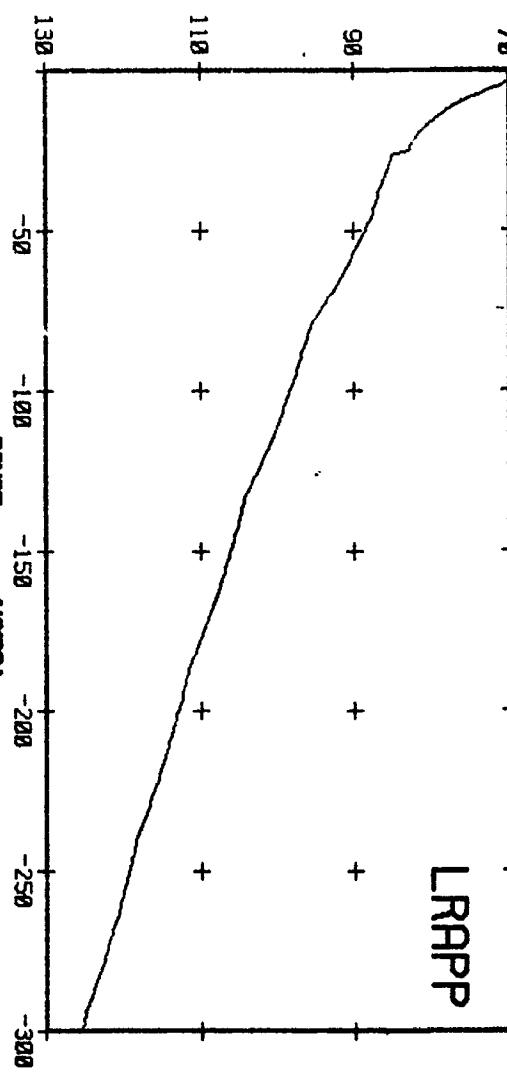
S 233 R 7788 F 688

1450 M/S

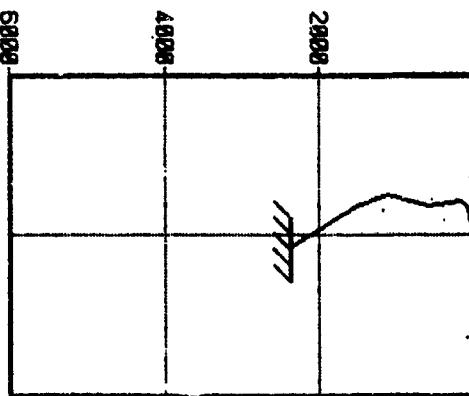
1500 1550

LRAPP

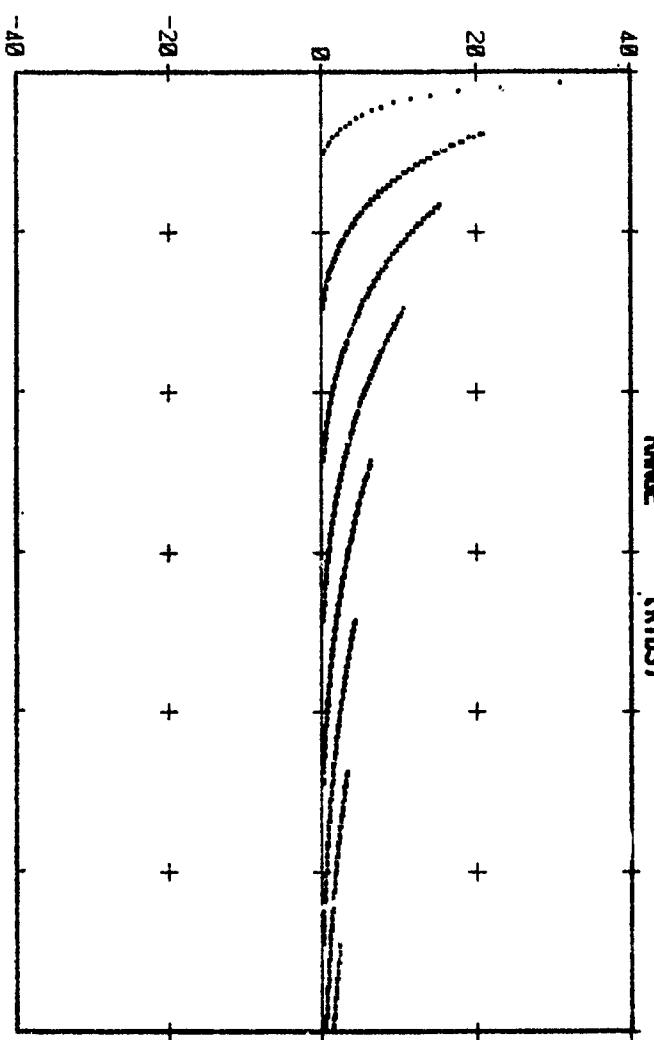
DB LOSS



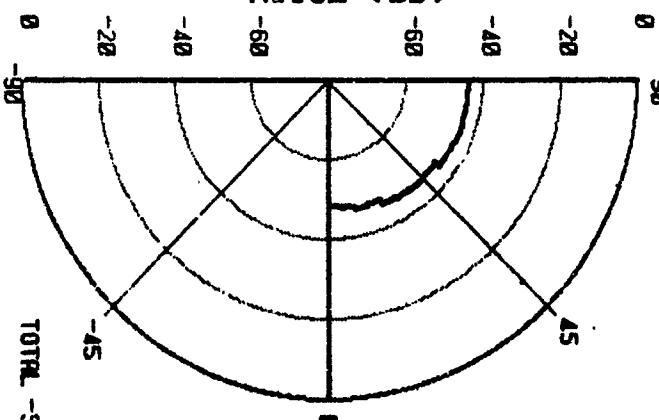
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)



TOTAL -38.8 DB

-144-

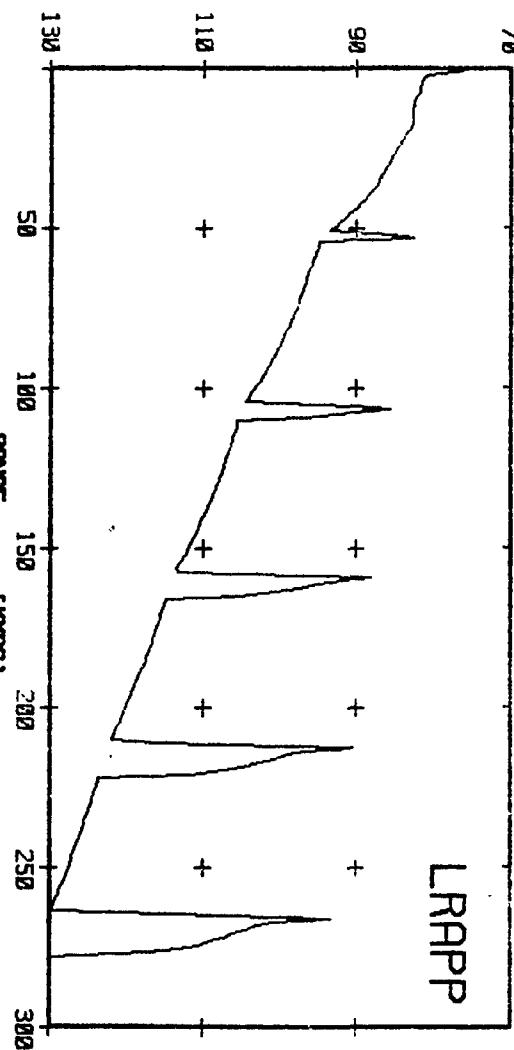
70

AFTER AIR SUMMER

S 24 R 64 F 988

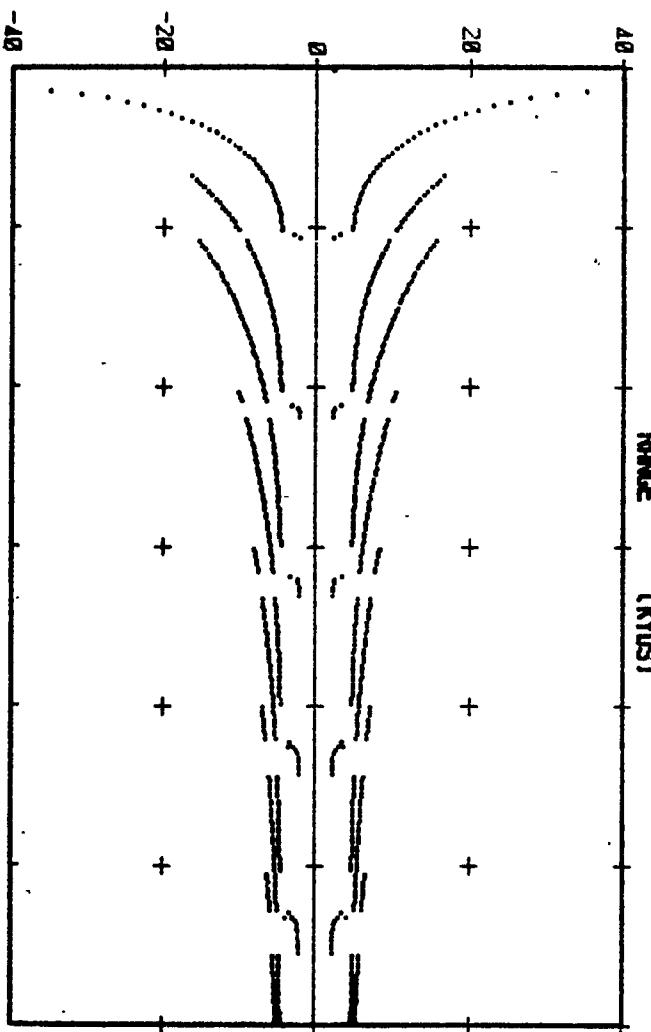
1450 m/s 1500 1550

DB LOSS

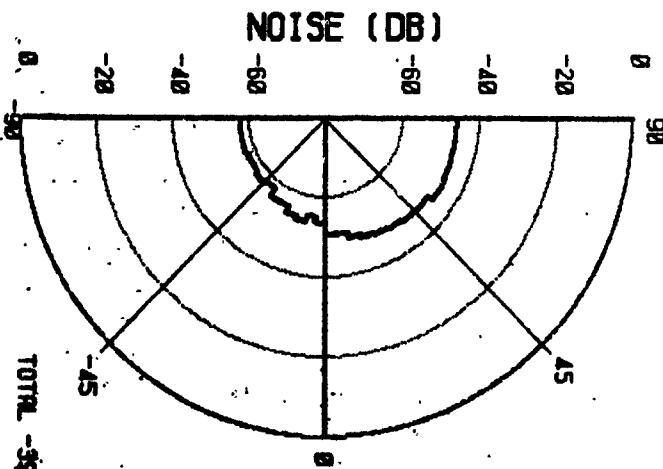


L RAPP

ARRIVAL ANGLE

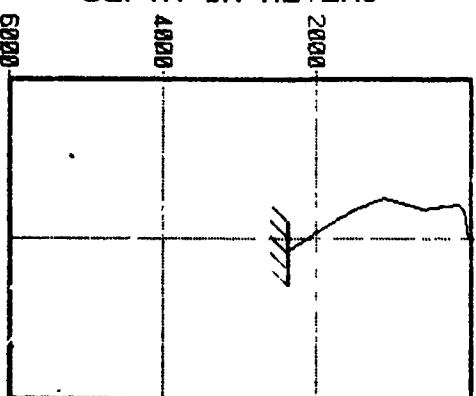


NOISE (DB)



TOTAL -39.2 DB

DEPTH IN METERS

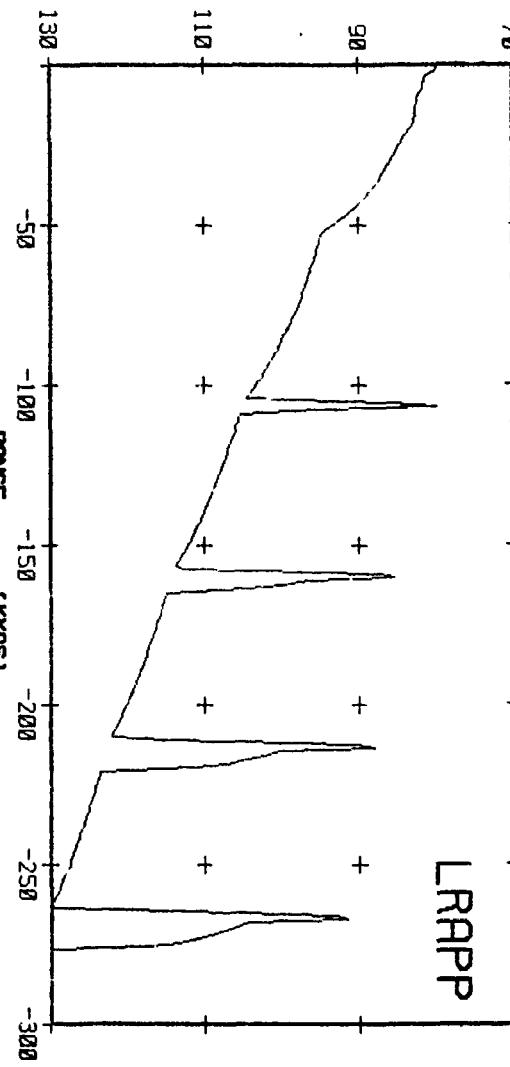


AREA 4A SUMMER

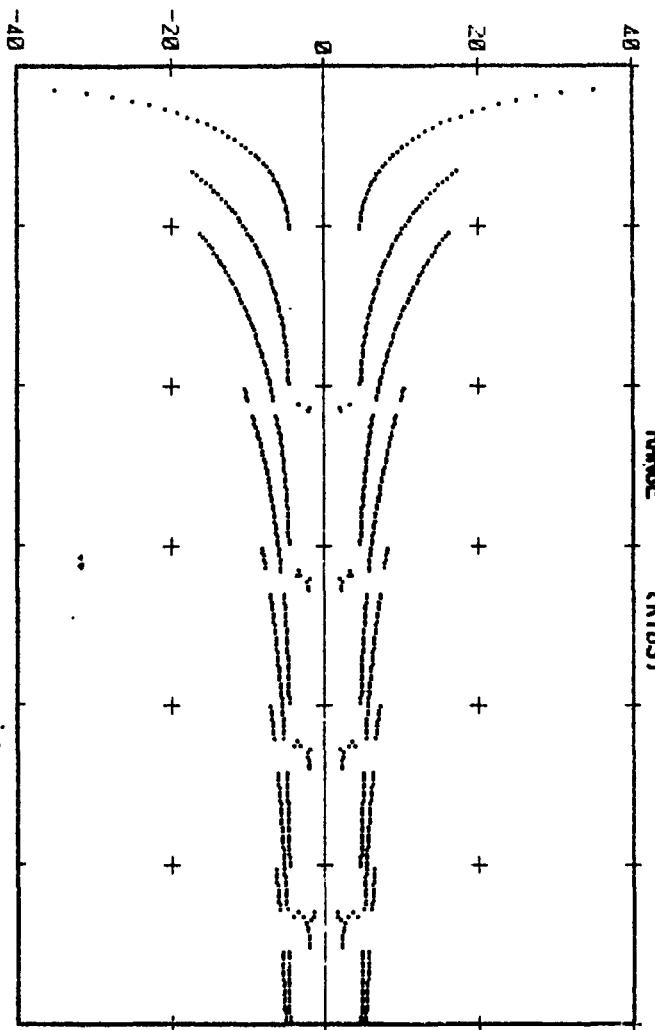
S 59 R 69 F 900

1450 M/S 1500 1550

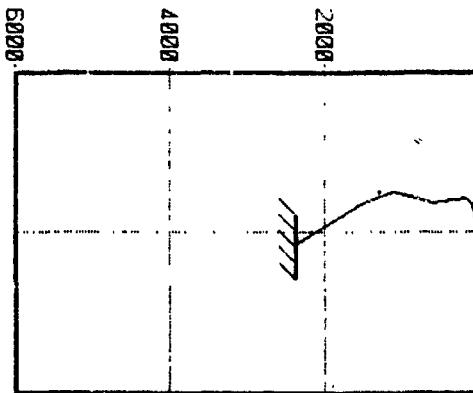
DB LOSS



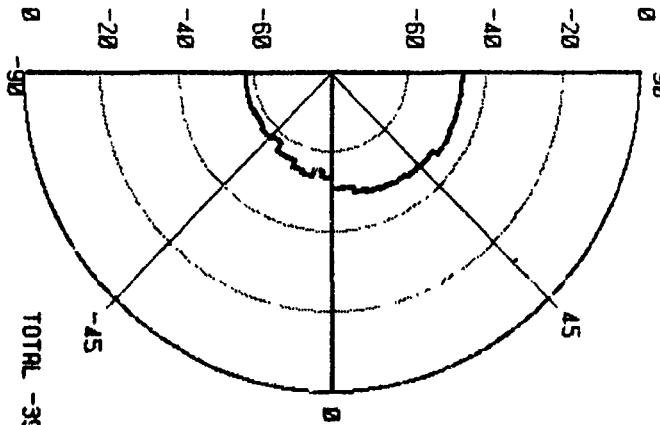
ARRIVAL ANGLE



DEPTH IN METERS

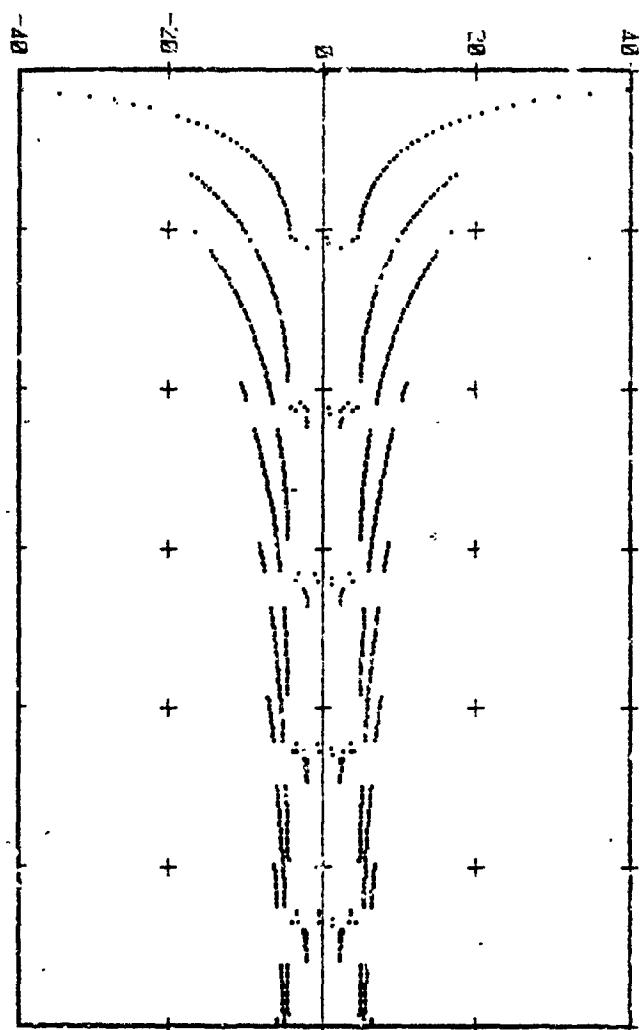


NOISE (DB)

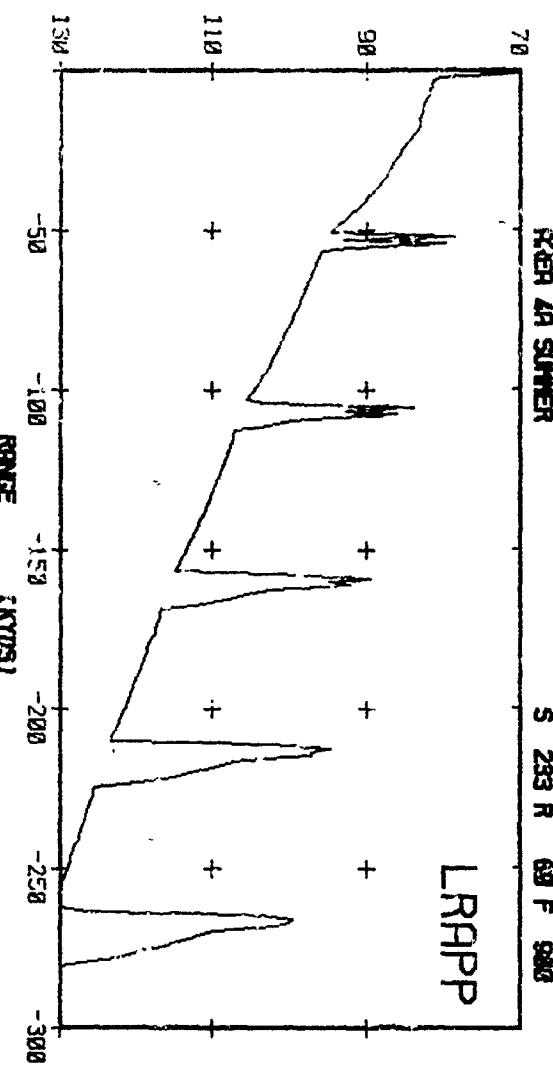


TOTAL -39.2 DB

ARRIVAL ANGLE



DB LOSS



LRAAPP

70

KER 4A SUMMER

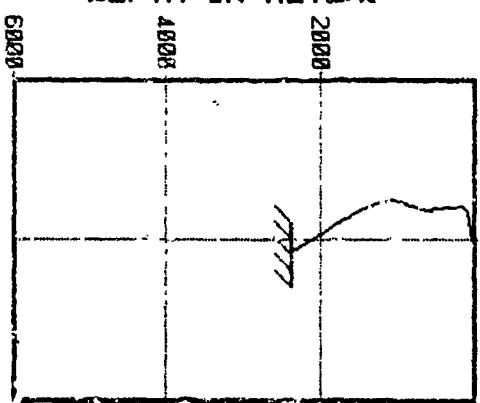
S 233 R 69 F 900

1450 W/S

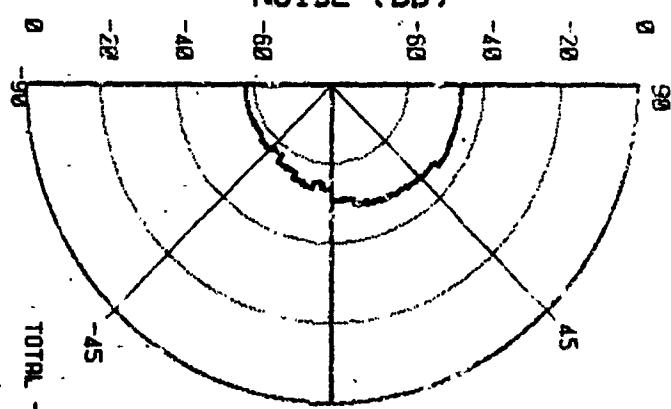
1500

1550

DEPTH IN METERS



NOISE (DB)



TOTAL -39.2 DB

70

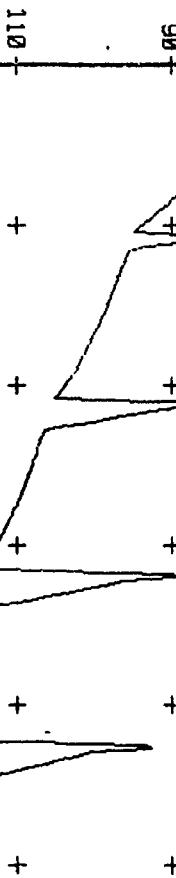
PRES 4R SUMMER

S 20 R 133 F 90

1450 M/S 1500 1550

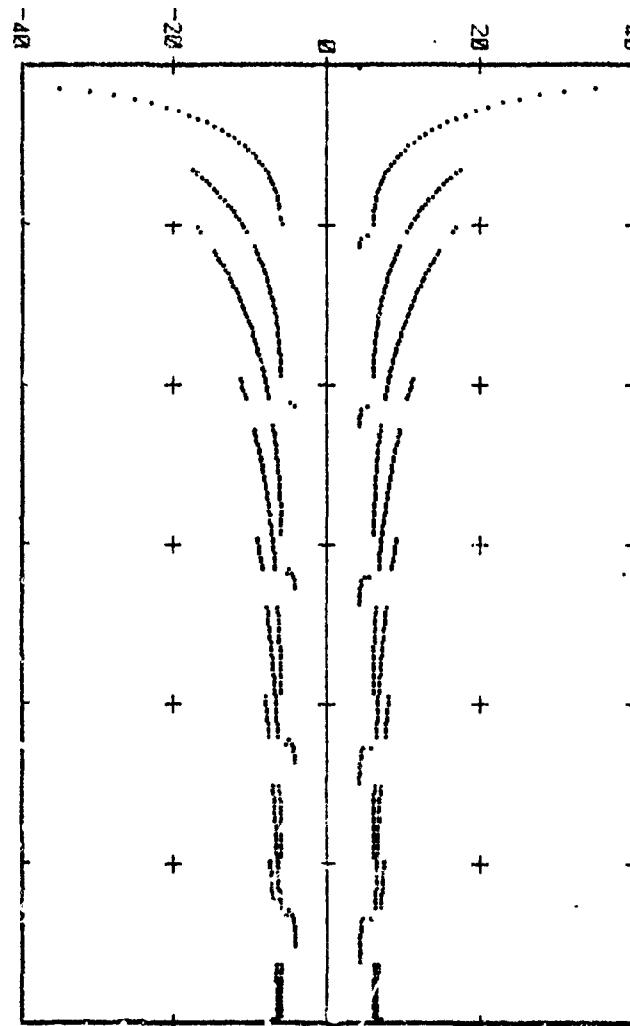
LRRPP

DB LOSS

130
110
90
DB LOSS

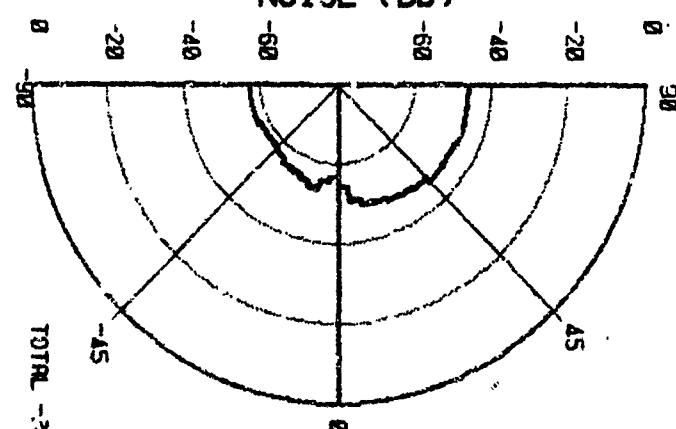
RANGE (KMS)

ARRIVAL ANGLE



NOISE (DB)

DEPTH IN METERS



-50 -40 -30 -20 -10 0

-50 -40 -30 -20 -10 0

-50 -40 -30 -20 -10 0

-50 -40 -30 -20 -10 0

-50 -40 -30 -20 -10 0

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70

AER AR SUMMER

S

50

R

133

F

900

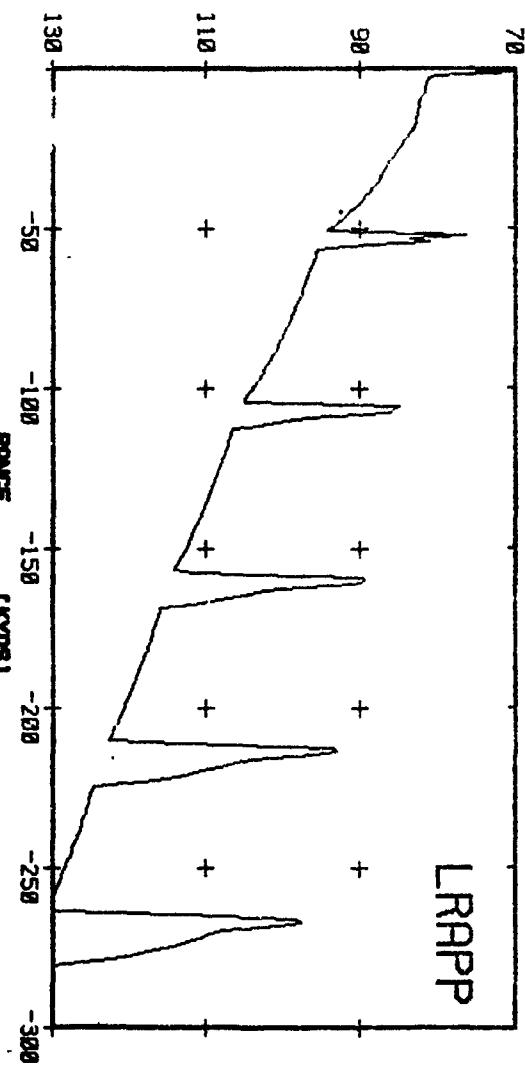
1450

M/S

1500

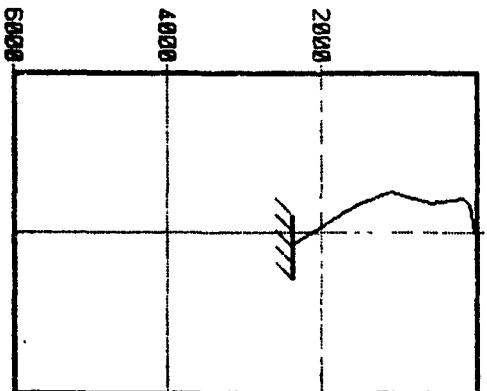
1550

DB LOSS

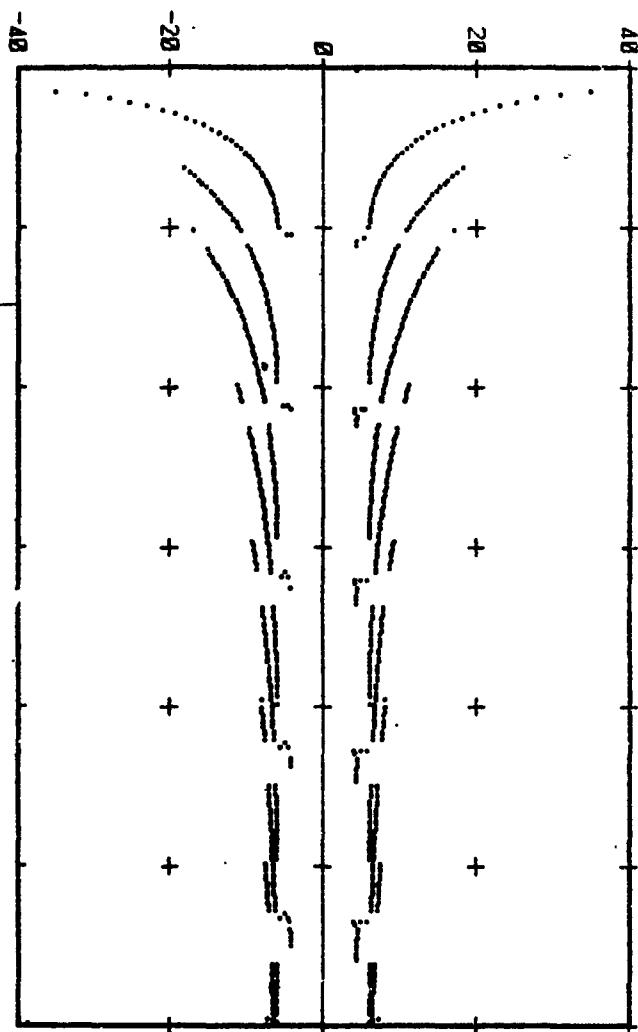


L RAPP

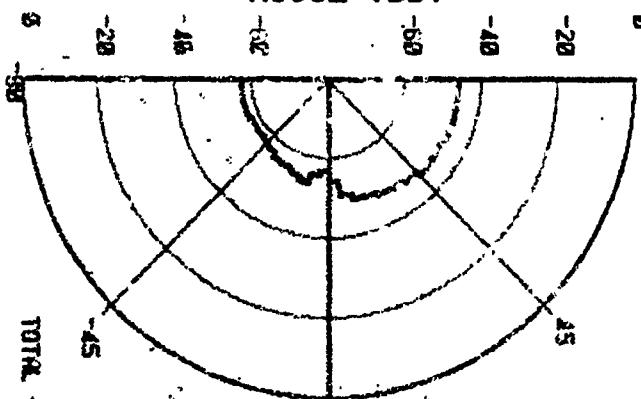
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)



TOTAL -38.4 DB

70

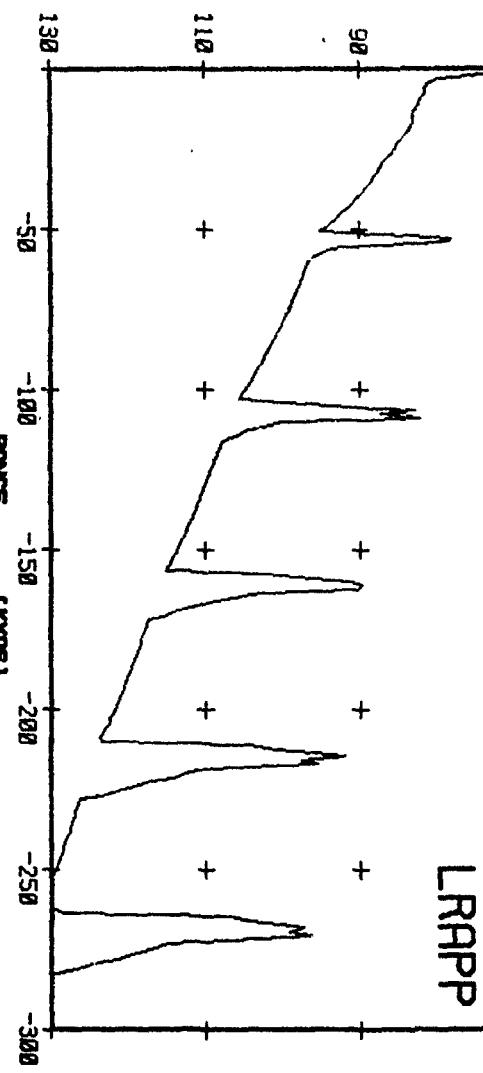
AFTER AIR SUMMER.

S 233 R 193 F 800

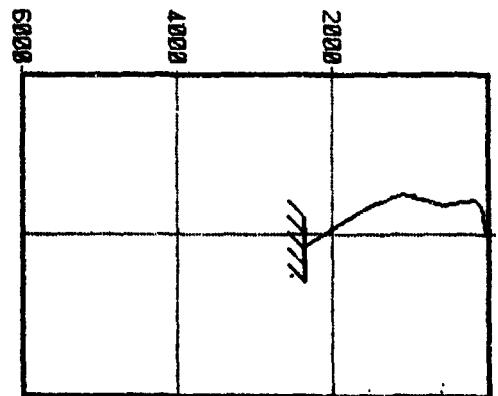
1450 M/S 1500 1550

LRAPP

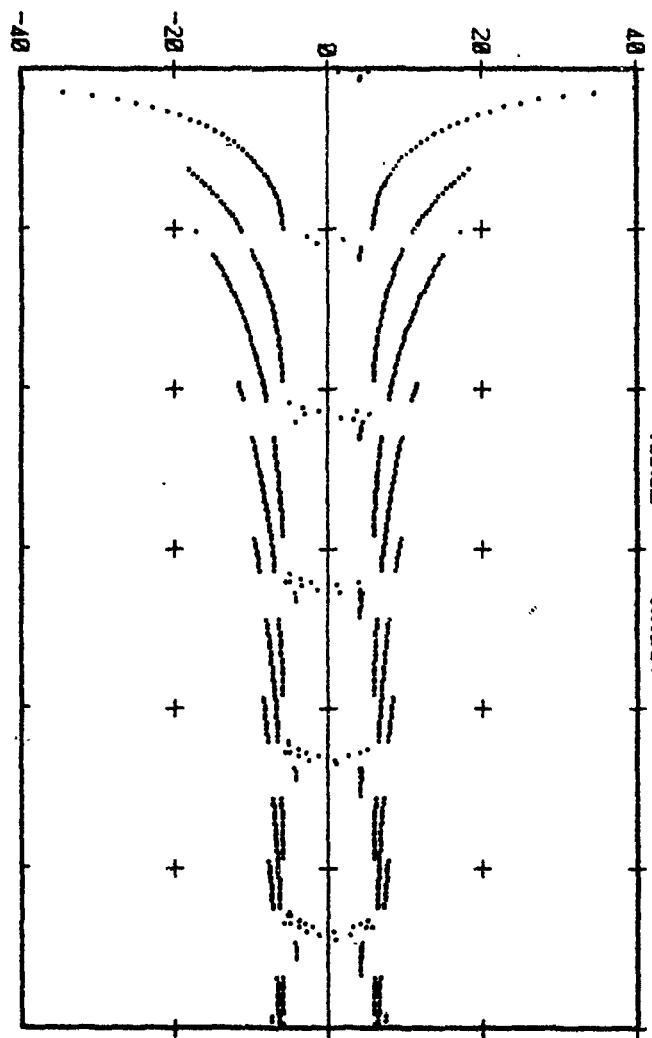
DB LOSS



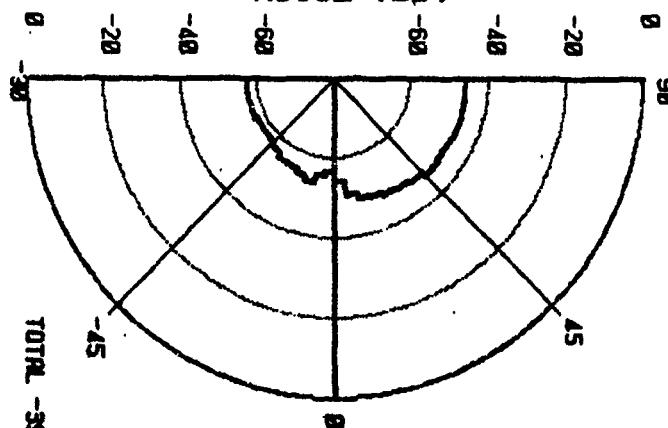
DEPTH IN METERS

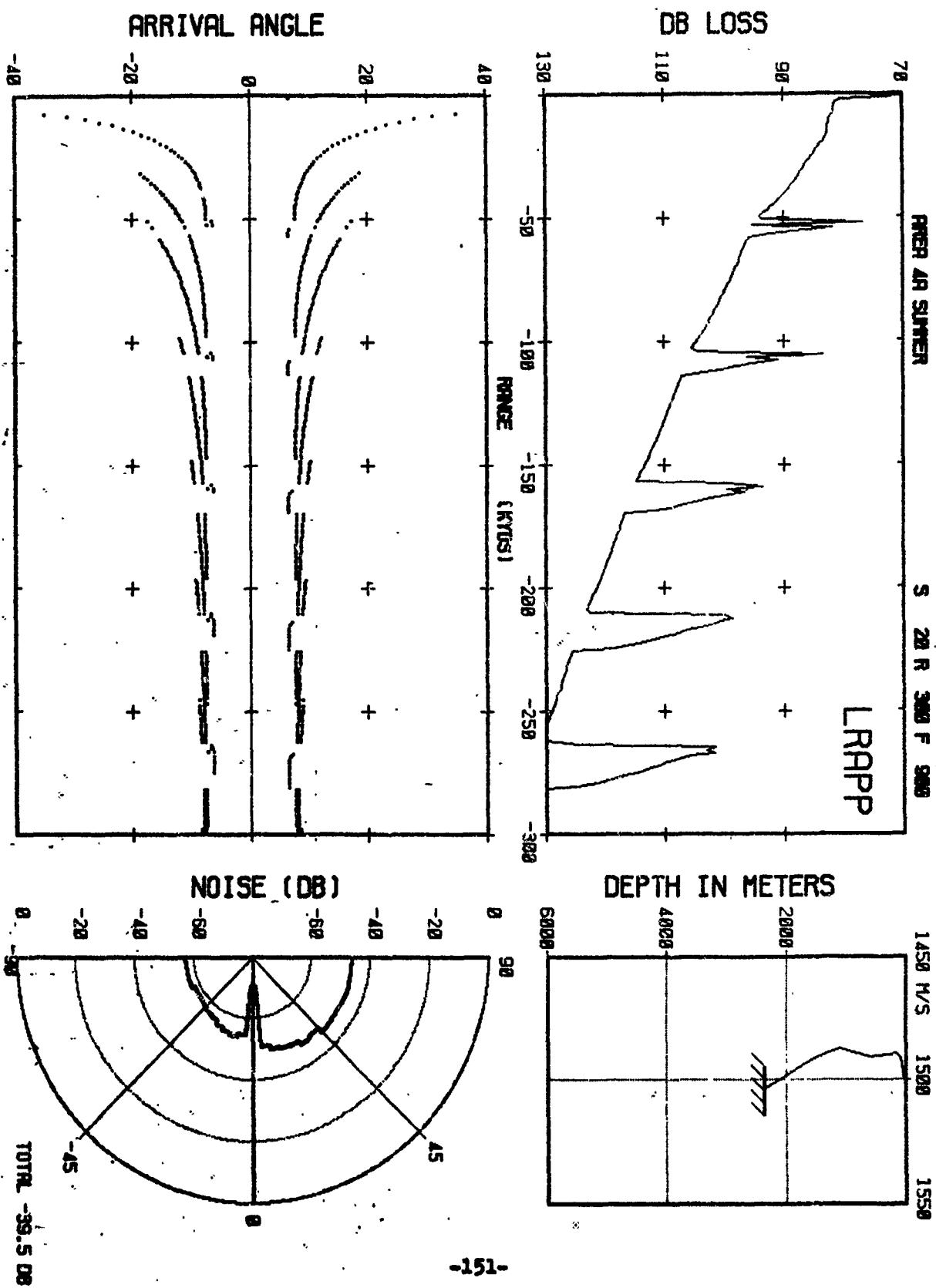


ARRIVAL ANGLE

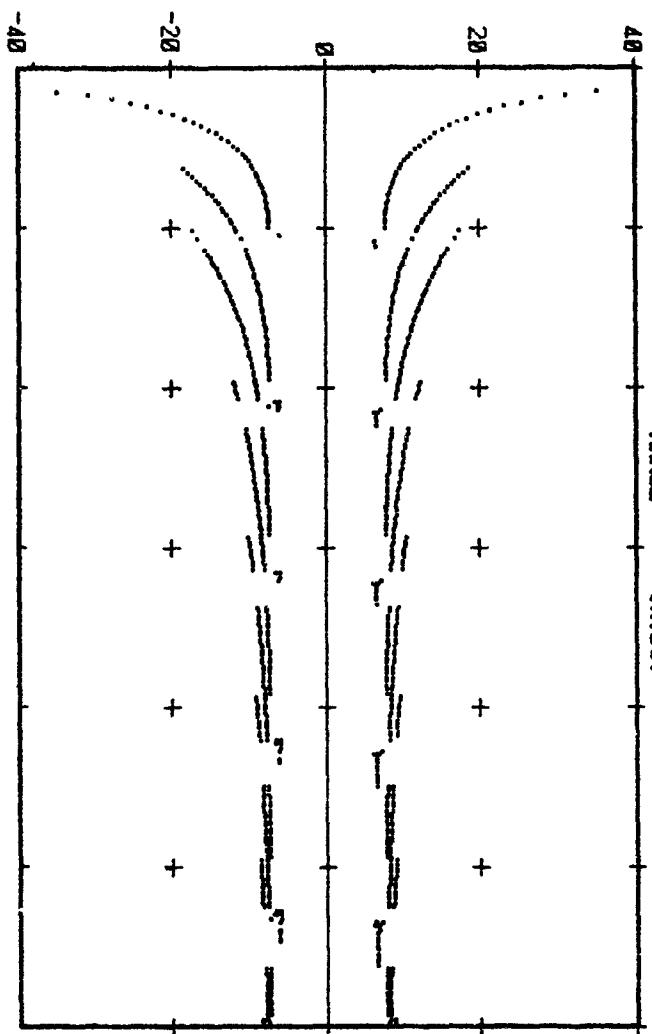


NOISE (DB)

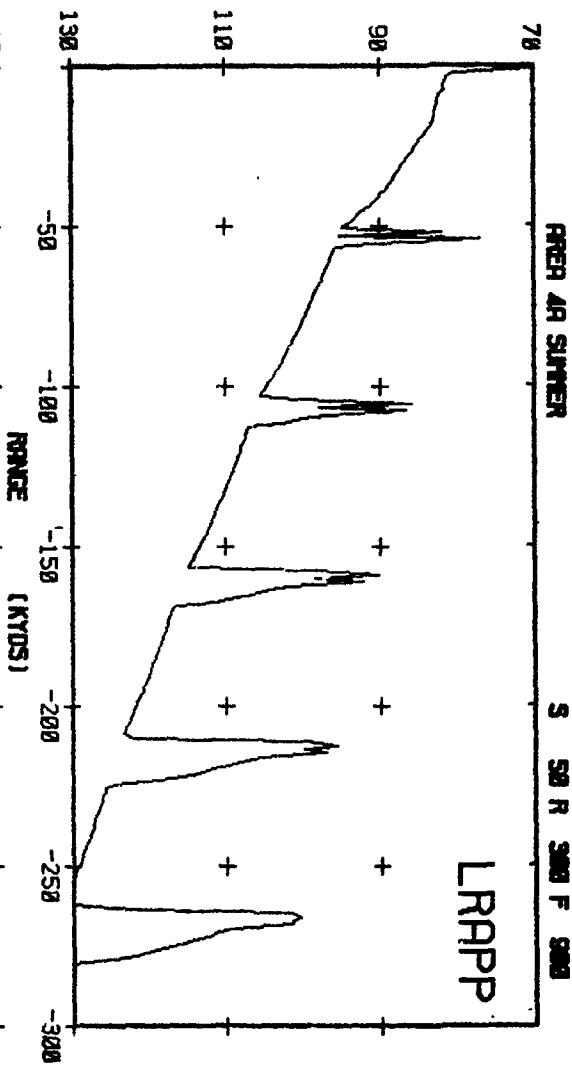




ARRIVAL ANGLE



DB LOSS



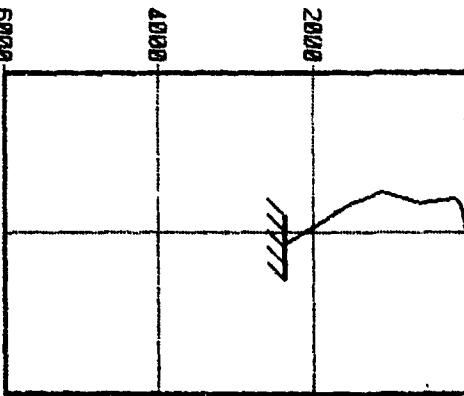
AREA 4A SUMMER

S S9 R 300 F 300

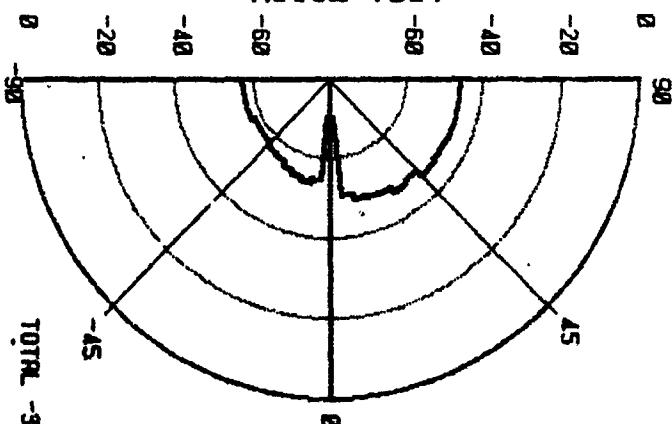
LRAPP

1450 M/S 1500 1550

DEPTH IN METERS



NOISE (DB)



TOTAL -39.5 DB

70

ARR ARR SUMMER

S 233 R 300 F 880

1450 M/S 1500 1550

DB LOSS

L RAPP

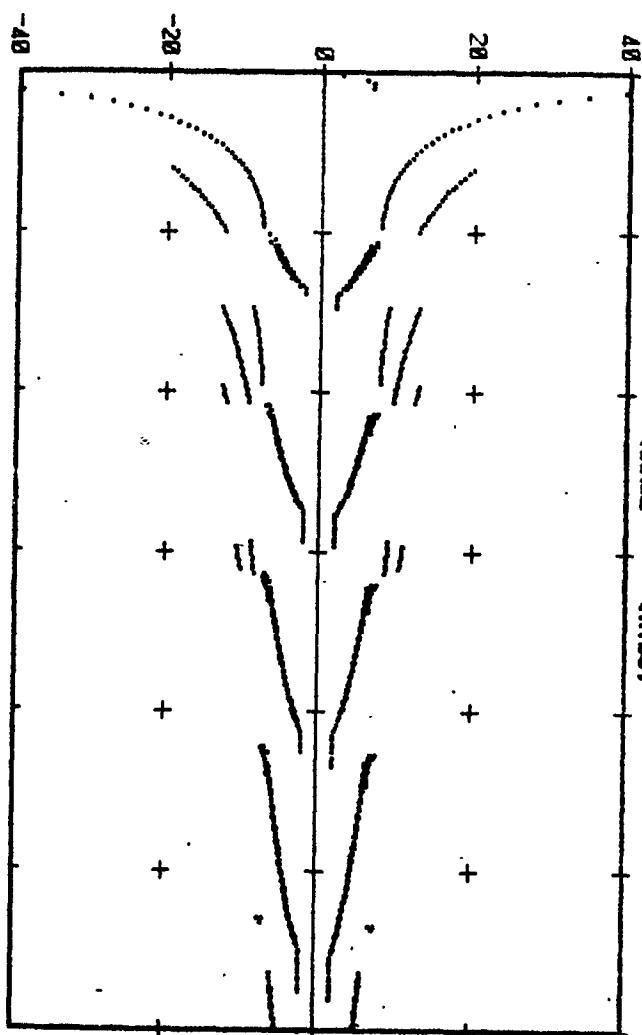
DEPTH IN METERS

130
110
90
-50
-100
-150
-200
-250
-300

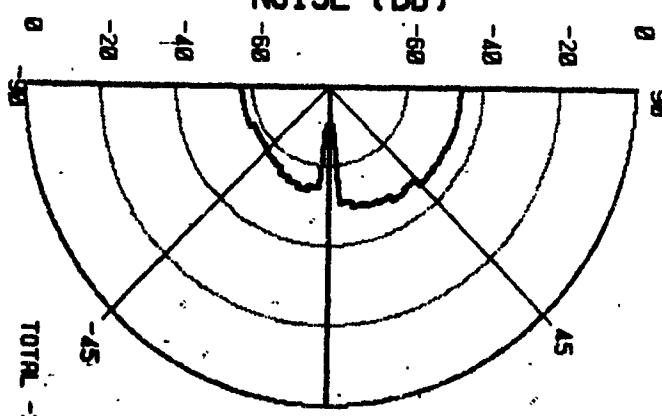
60000
40000

-153-

ARRIVAL ANGLE



NOISE (DB)



TOTAL -39.5 DB

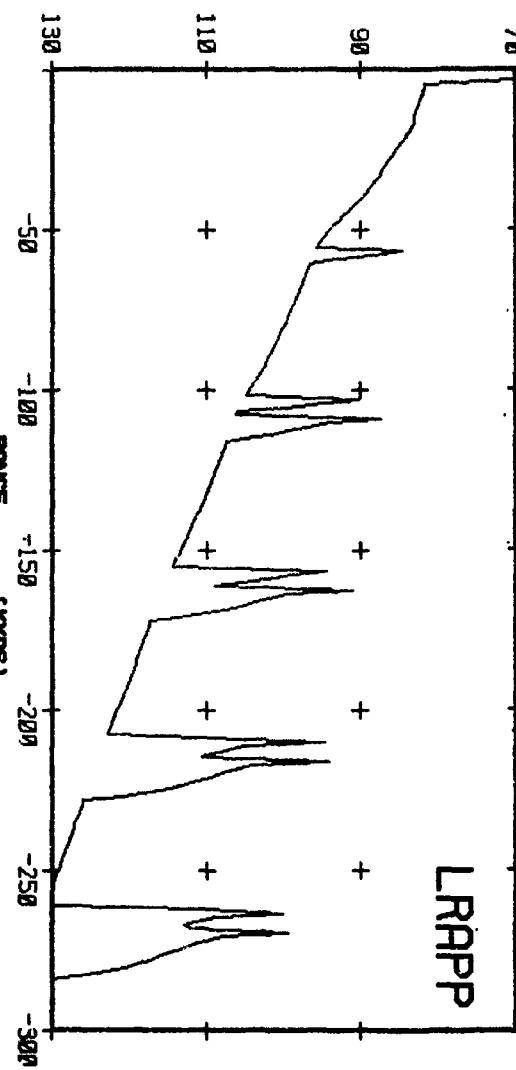
78

AREA 4A SUMMER

S 28 R 100 F 900

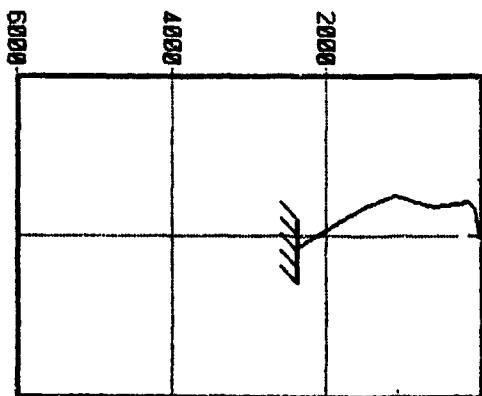
1458 M/S 1508 1558

DB LOSS

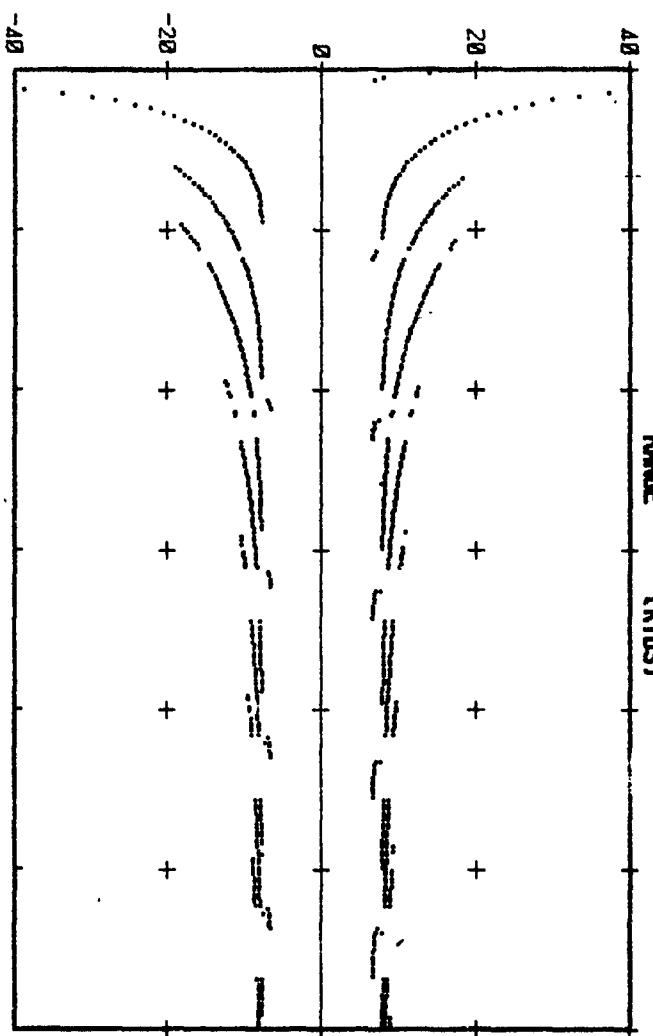


LRAPP

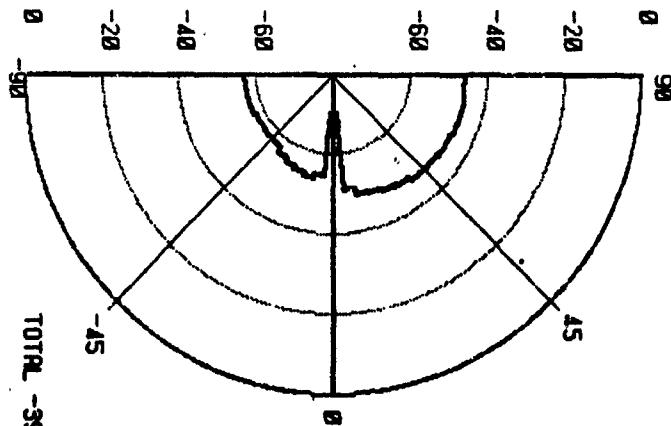
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)



TOTAL -39.5 DB

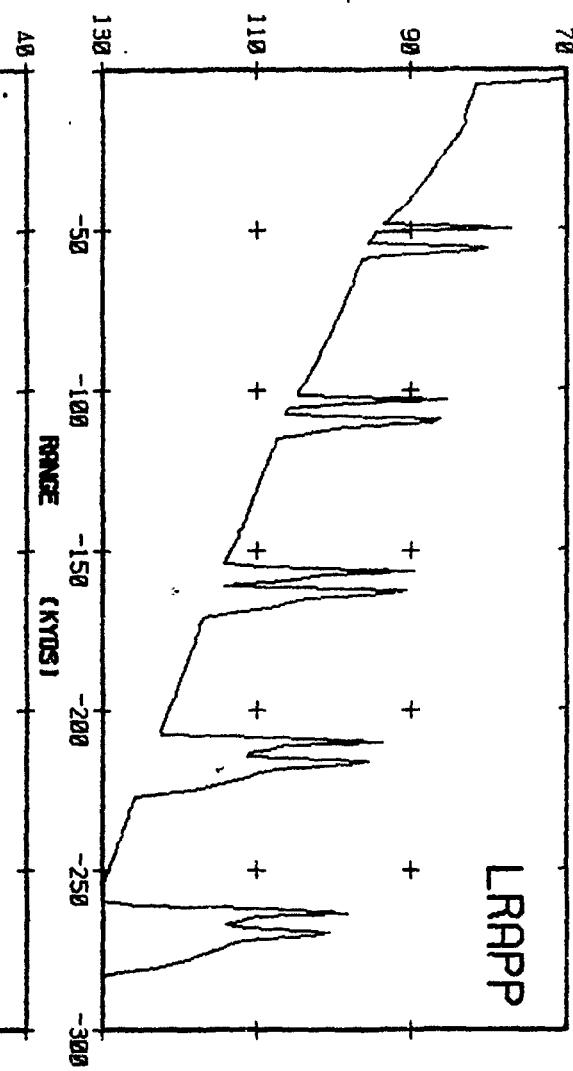
AREA 4R SUMMER

S 50 R 100 F 900

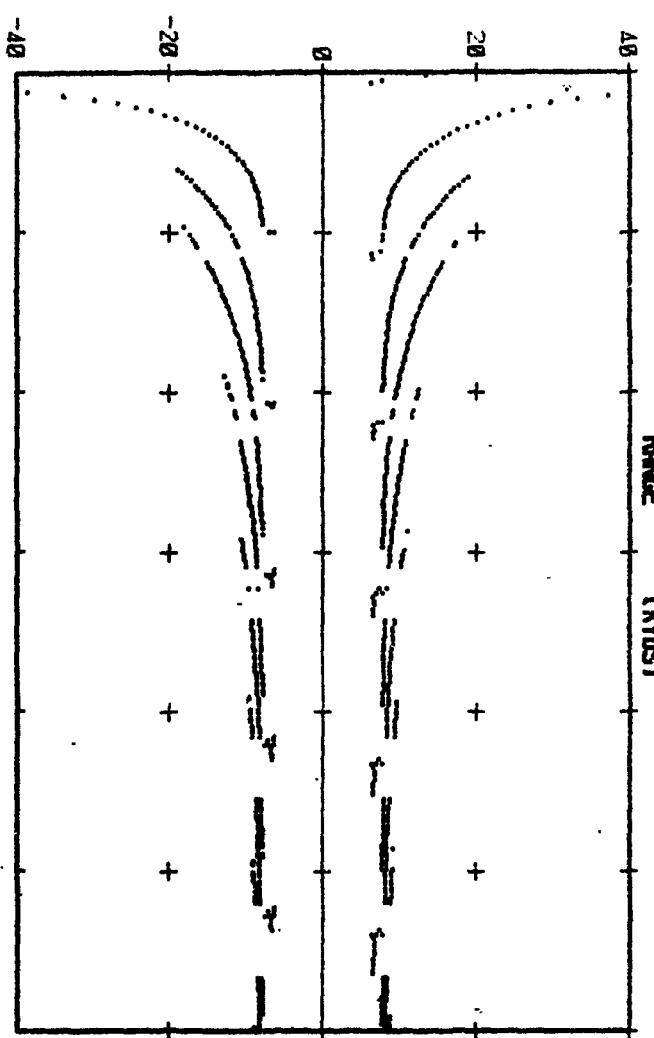
1450 M/S 1500 1550

LRAPP

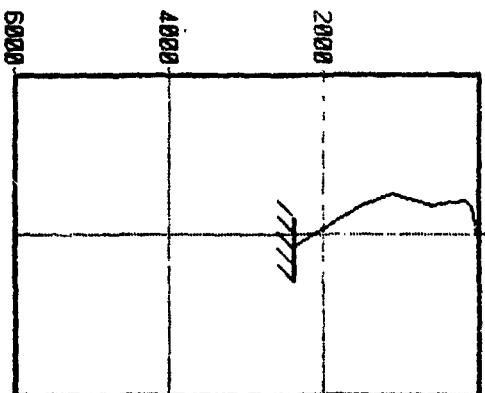
DB LOSS



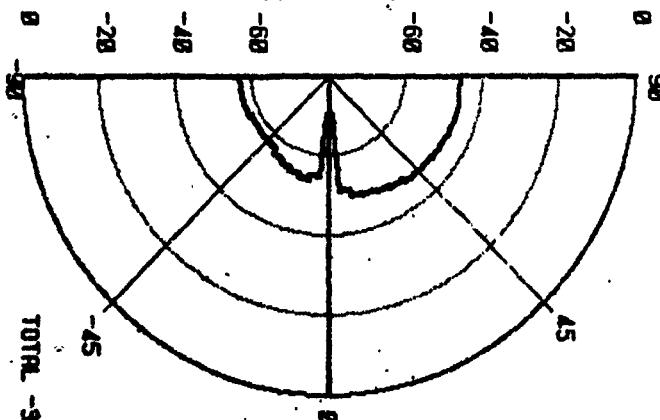
ARRIVAL ANGLE



DEPTH IN METERS

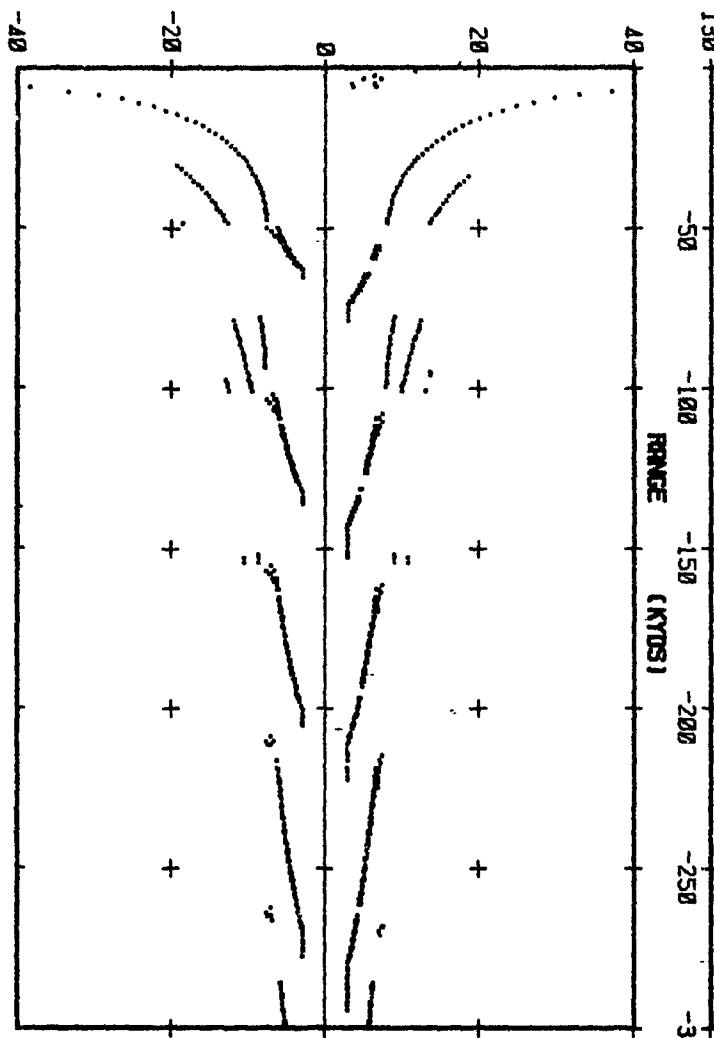


NOISE (DB)

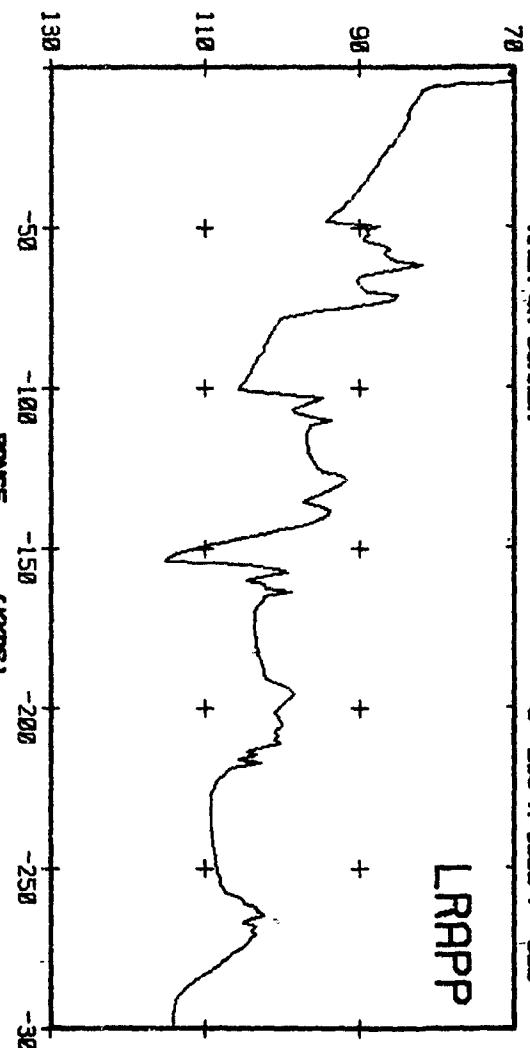


TOTAL -99.5 DB

ARRIVAL ANGLE



DB LOSS



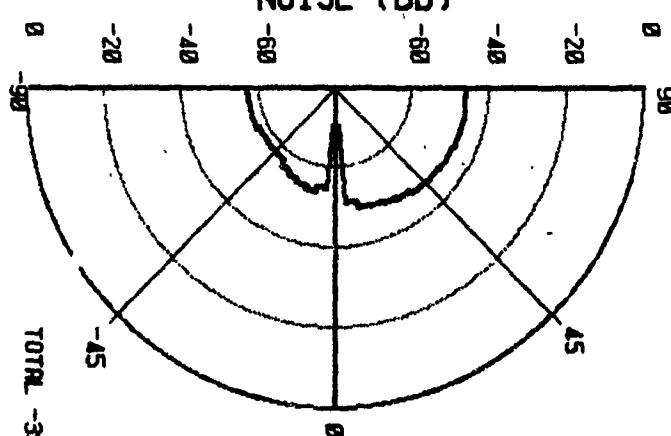
AMER AR SUMMER

S 289 R 1000 F 900

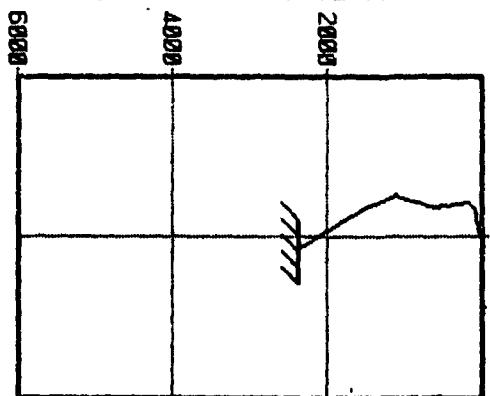
LRAPP

1450 M/S 1500 1550

NOISE (DB)



DEPTH IN METERS

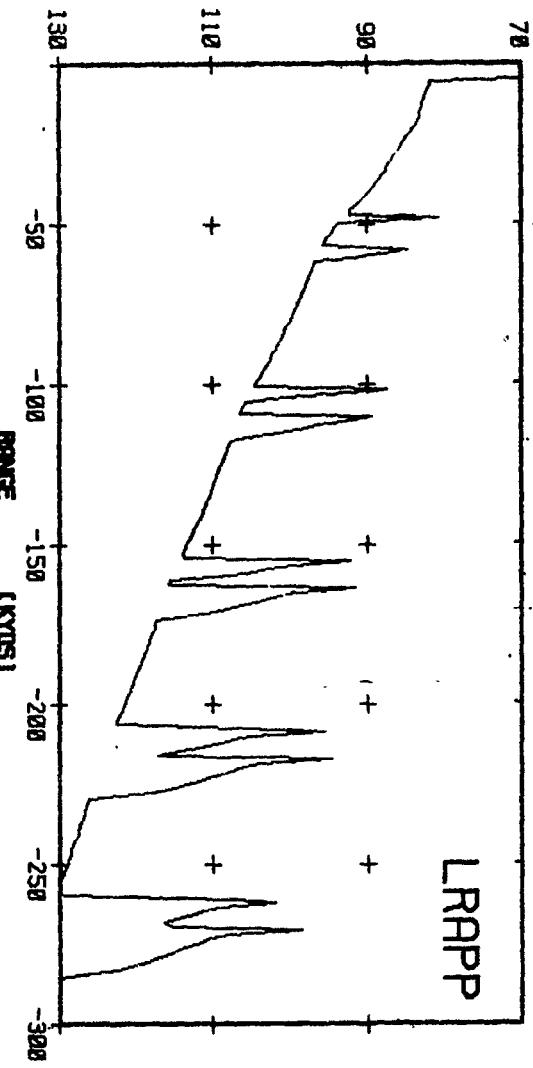


S 20 R 1500 F 30°

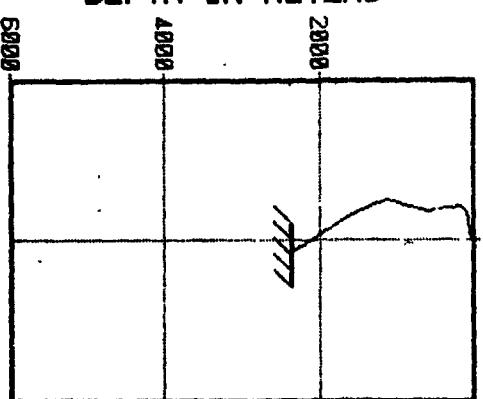
1450 M/S 1500 1550

LRAPP

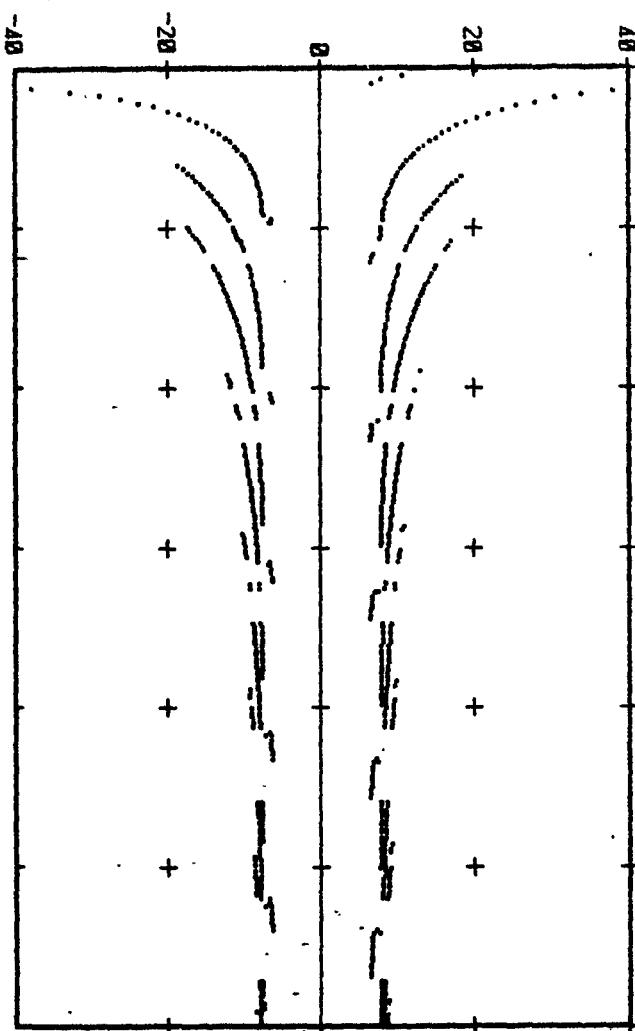
DB LOSS



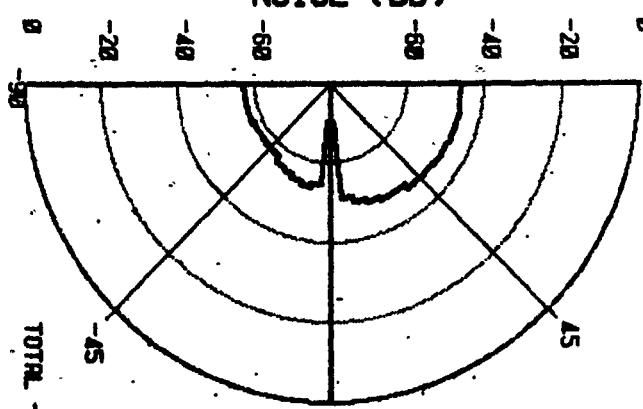
DEPTH IN METERS



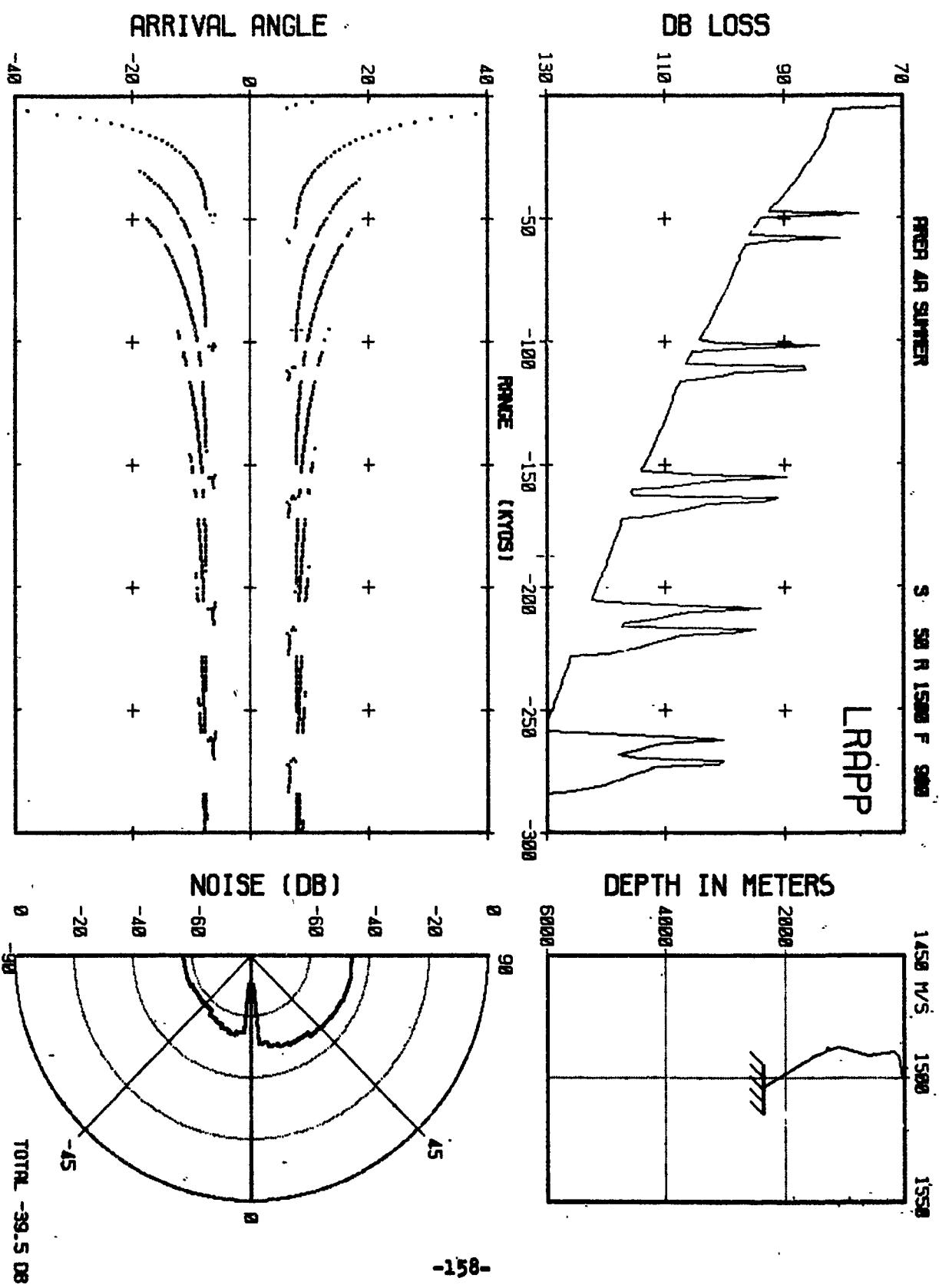
ARRIVAL ANGLE



NOISE (DB)



TOTAL -39.5 DB

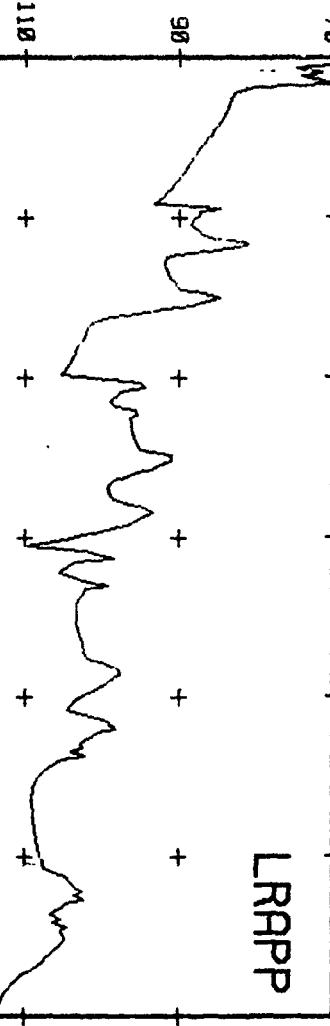


RIVER AIR SUMMER

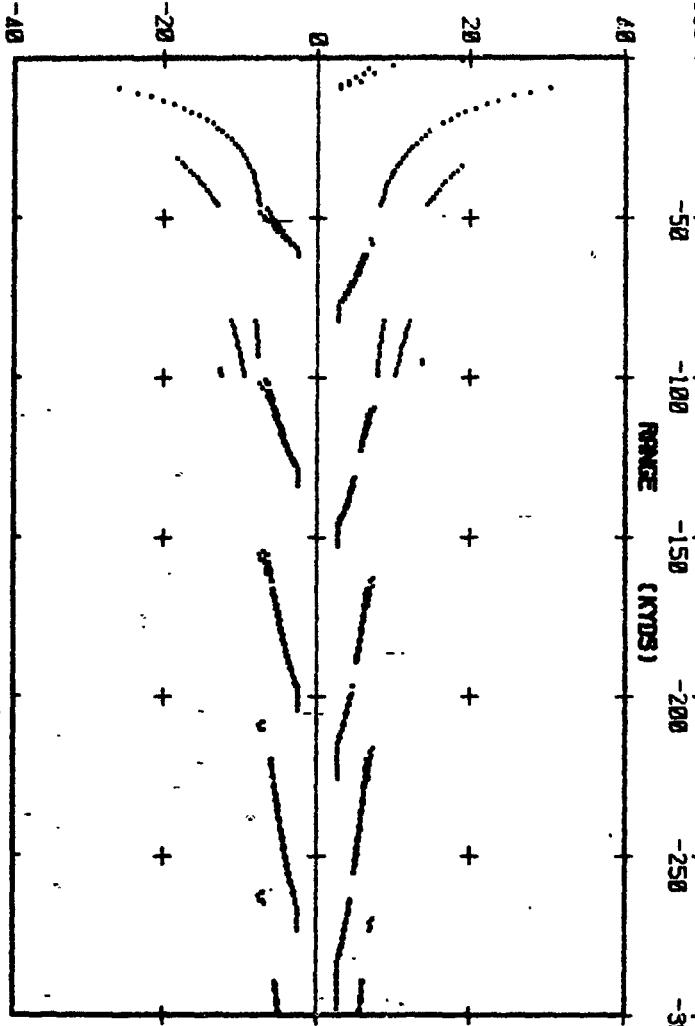
S 253 R 1500 F 900

1450 M/S 1500 1555

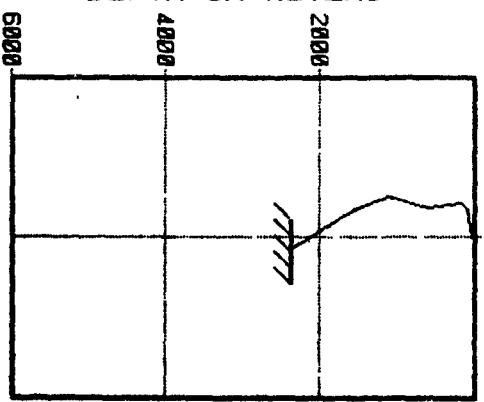
DB LOSS



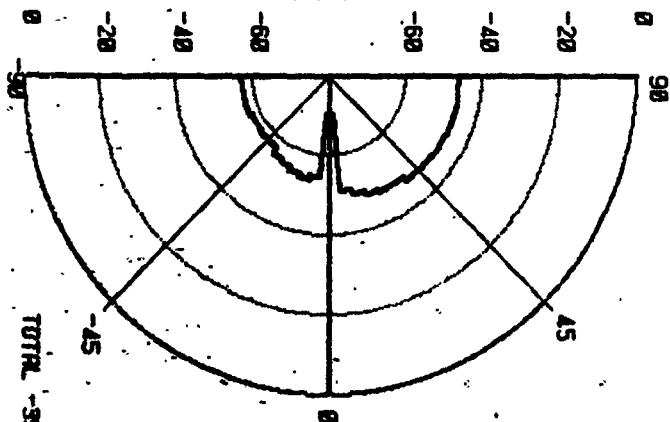
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



TOTAL -39.5 dB

RER 4R SUMMER

S 20 R 3767 F 900

1450 M/S 1500 1550

LRAAPP

DB LOSS

200

110

20

-10

-20

-30

-40

-50

-60

-70

-80

-90

-100

-110

-120

-130

-140

-150

-160

-170

-180

-190

-200

-210

-220

-230

-240

-250

-260

-270

-280

-290

-300

10

0

-10

-20

-30

-40

-50

-60

-70

-80

-90

-100

-110

-120

-130

-140

-150

-160

-170

-180

-190

-200

-210

-220

-230

-240

-250

-260

-270

-280

-290

-300

-310

-320

-330

-340

-350

-360

-370

-380

-390

-400

-410

-420

-430

-440

-450

-460

-470

-480

-490

-500

-510

-520

-530

-540

-550

-560

-570

-580

-590

-600

-610

-620

-630

-640

-650

-660

-670

-680

-690

-700

-710

-720

-730

-740

-750

-760

-770

-780

-790

-800

-810

-820

-830

-840

-850

-860

-870

-880

-890

-900

-910

-920

-930

-940

-950

-960

-970

-980

-990

-1000

-1010

-1020

-1030

-1040

-1050

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-1080

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-1100

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-1120

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-1490

-1500

-1510

-1520

-1530

-1540

-1550

-1560

-1570

-1580

-1590

-1600

-1610

-1620

-1630

-1640

-1650

-1660

-1670

-1680

-1690

-1700

-1710

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-1770

-1780

-1790

-1800

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-1890

-1900

-1910

-1920

-1930

-1940

-1950

-1960

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-1980

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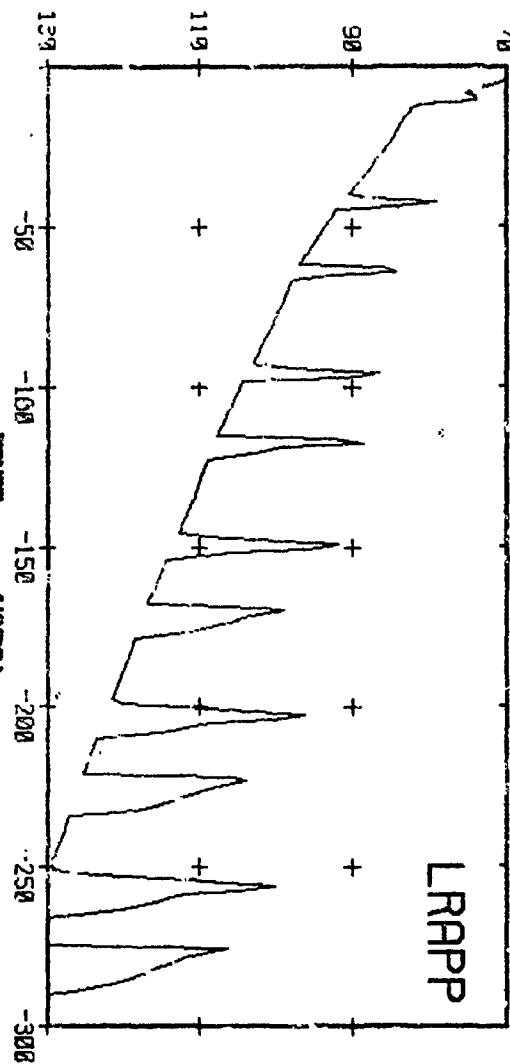
78 APR 4H SUMMER

S 53 R 3707 F 902

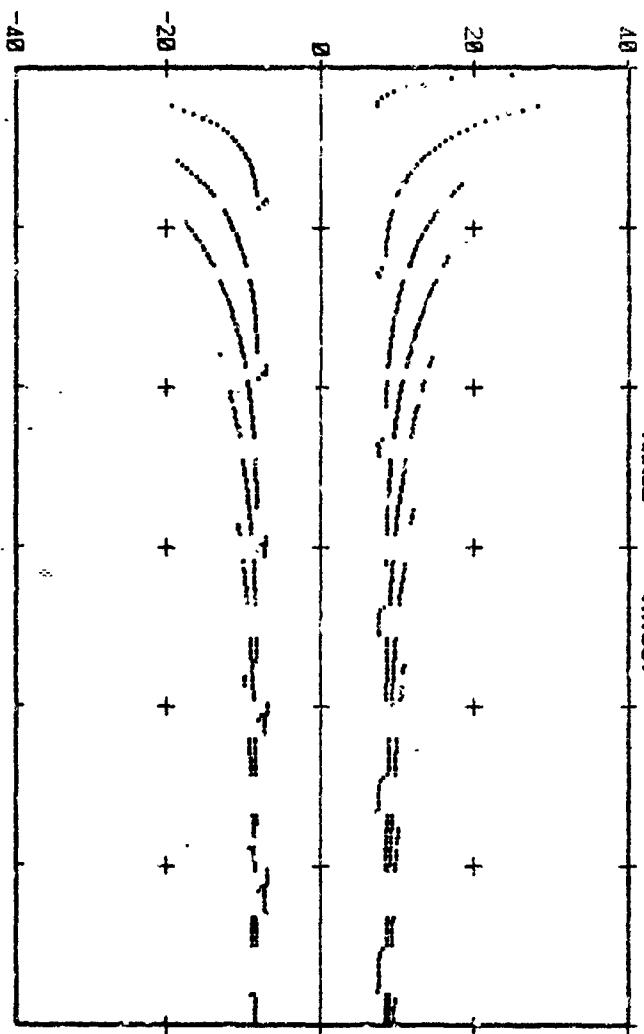
1450 M/S 1500 1550

L RAPP

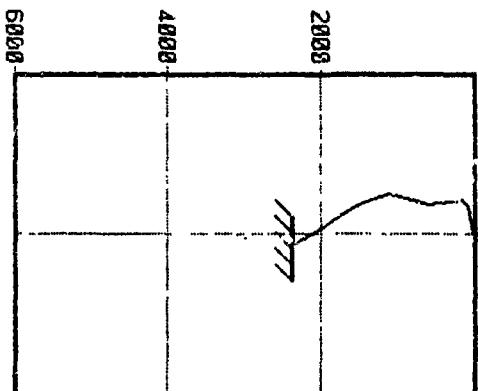
DB LOSS



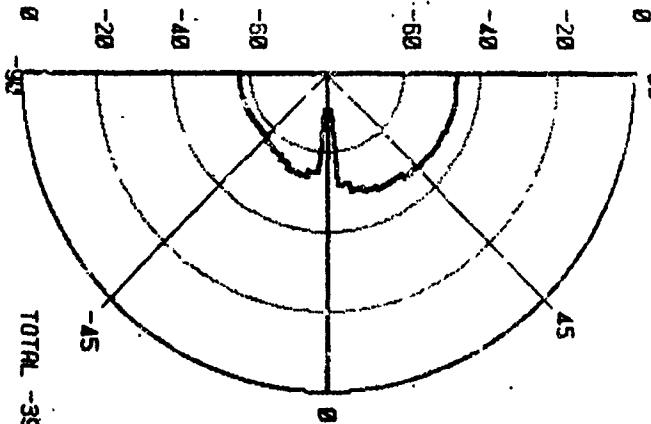
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



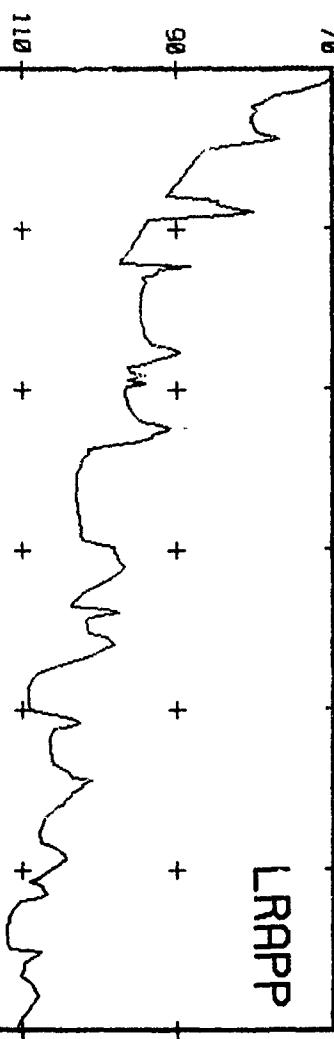
TOTAL -39.6 dB

AREA 4R SUMMER

S 233 R 3767 F 900

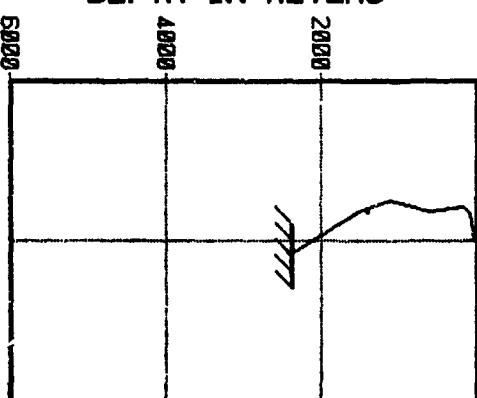
1450 M/S 1500 1550

DB LOSS

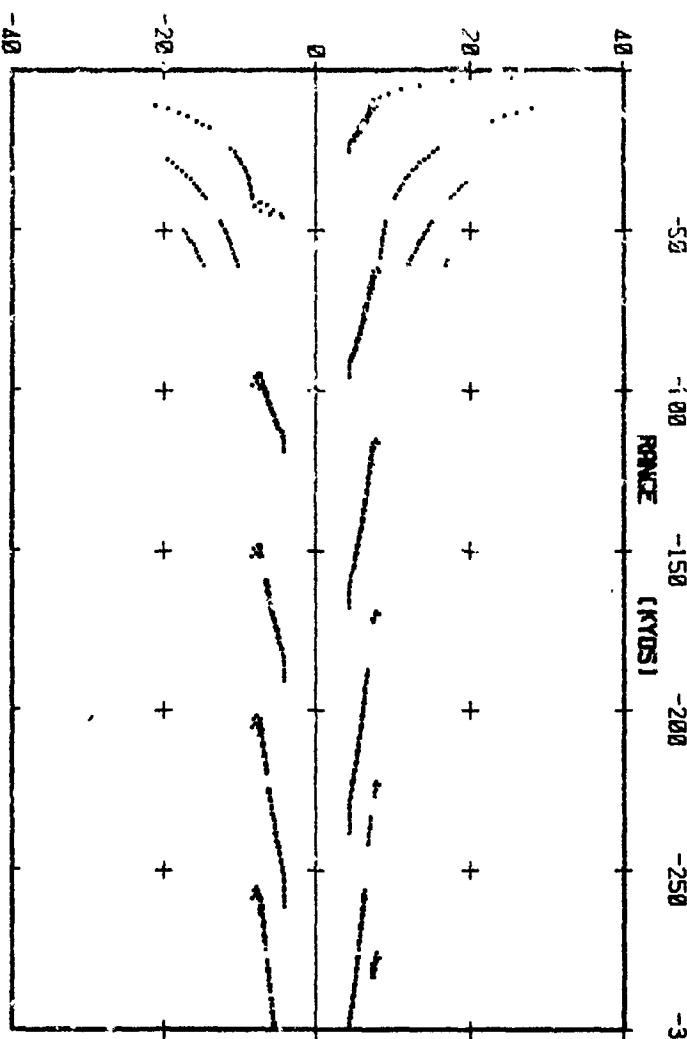


LRAPP

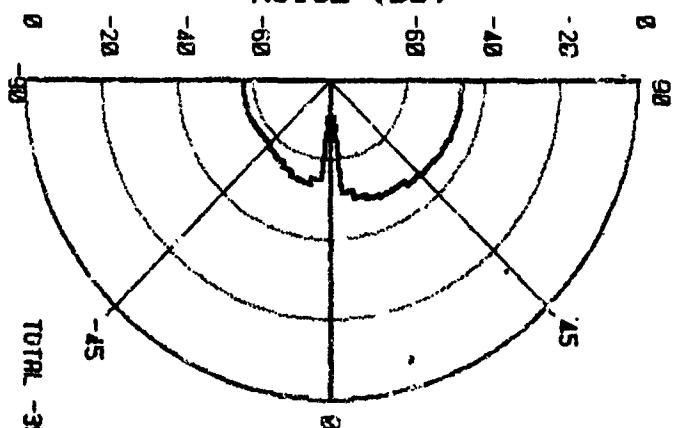
DEPTH IN METERS



ARRIVAL ANGLE

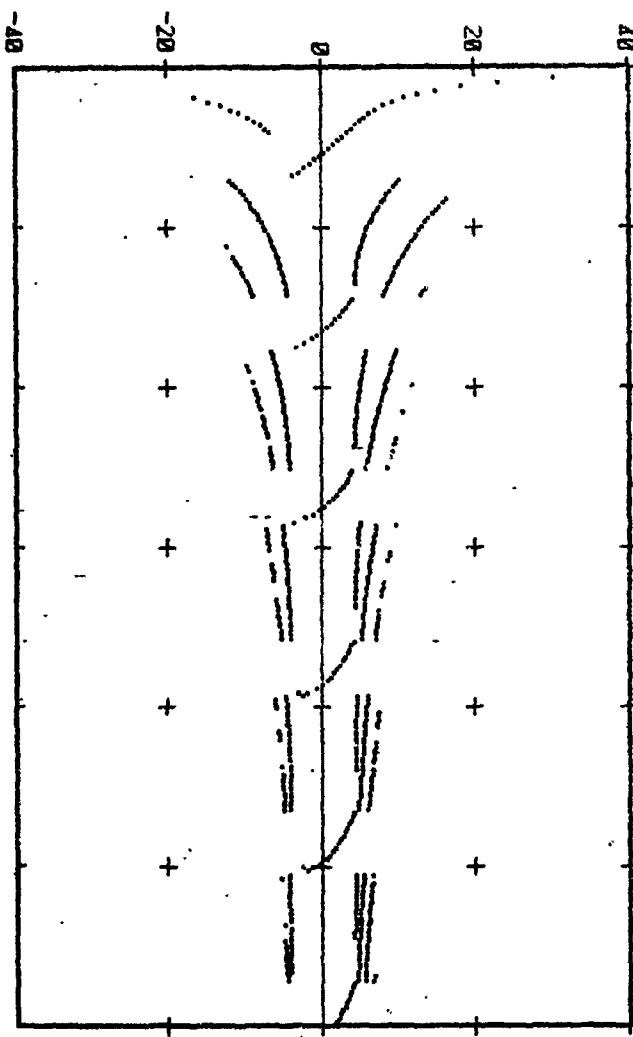


NOISE (DB)

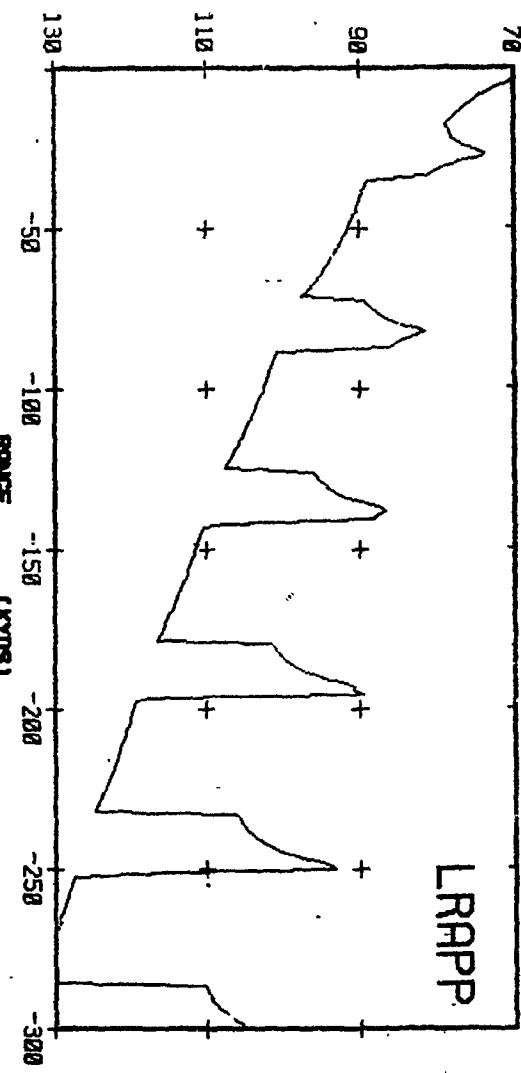


TOTAL -39.6 DB

ARRIVAL ANGLE



DB LOSS

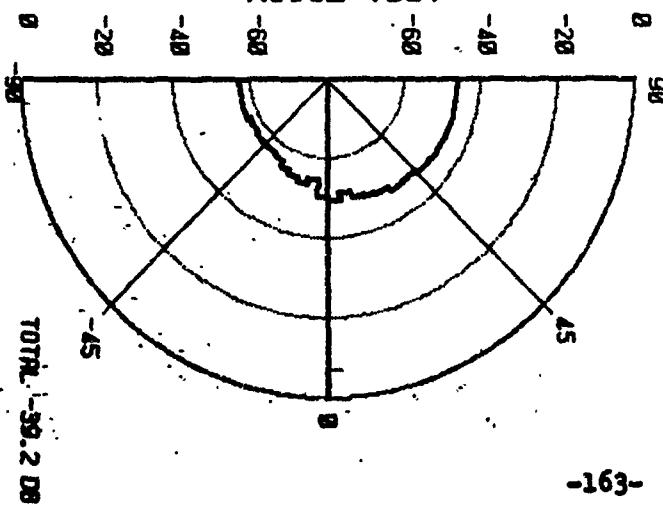


L RAPP

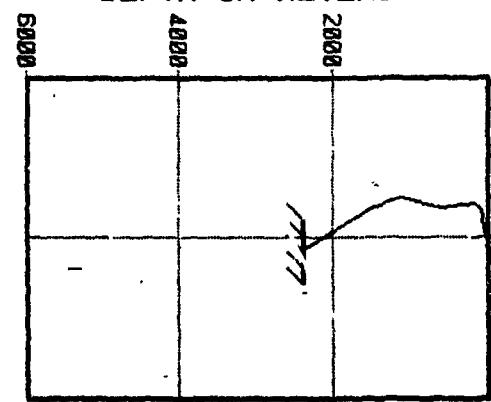
RIVER AR SUMMER S 20 R 6553 F 908

1450 M/S 1500 1550

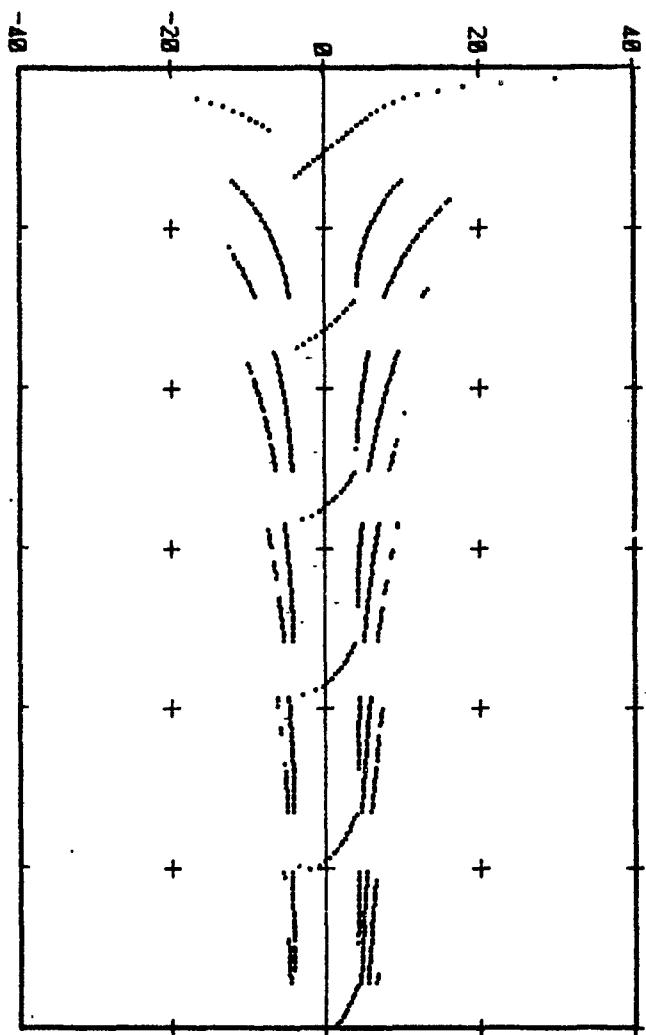
NOISE (DB)



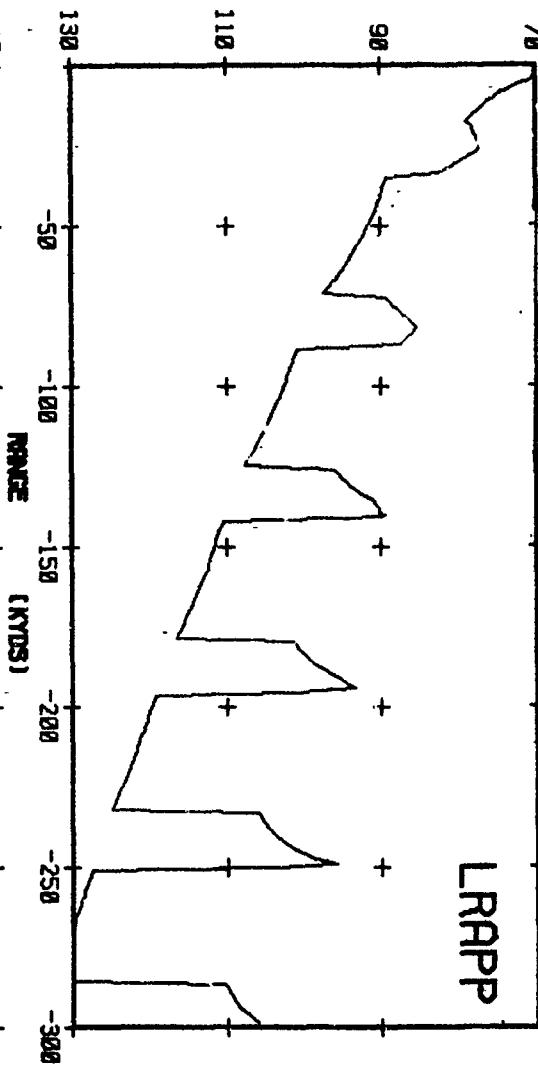
DEPTH IN METERS



ARRIVAL ANGLE



DB LOSS



AT&T 4A SUMMER

S

50.R 6665 F 900

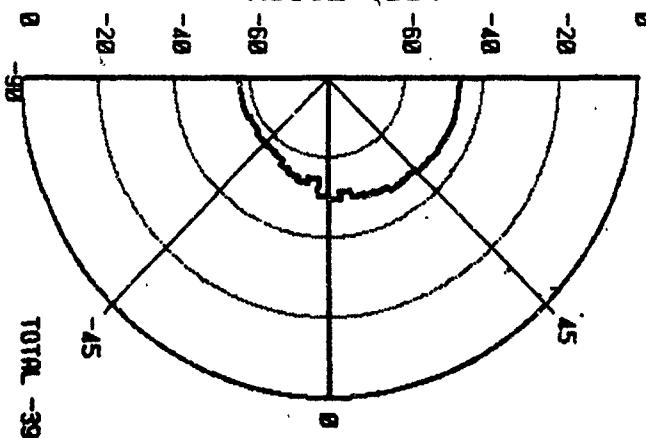
LRAPP

1450 M/S

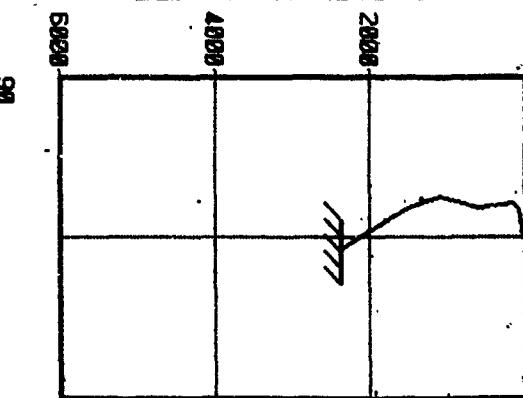
1500

1550

NOISE (DB)



DEPTH IN METERS



TOTAL -39.2 DB

70

PATER AR SUMMER

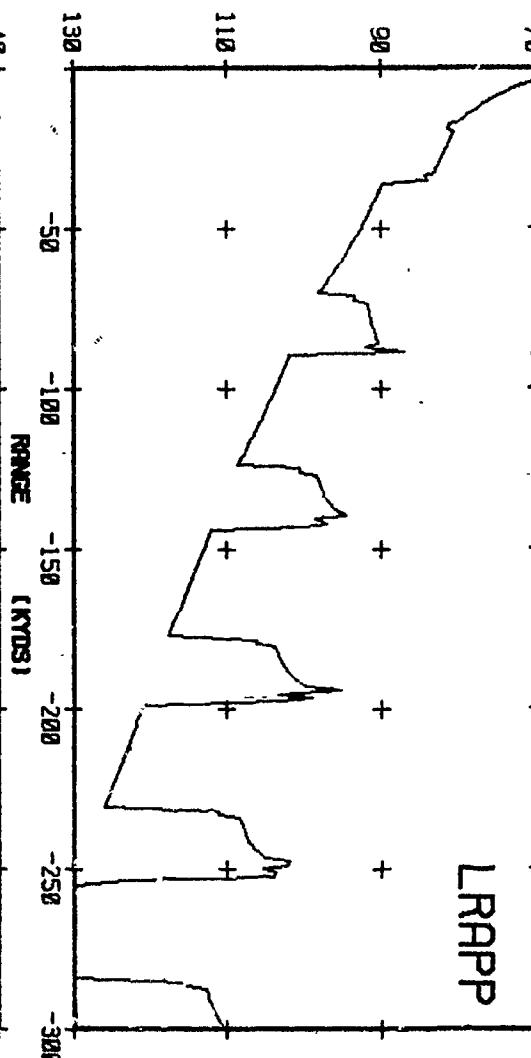
S 233 R 6853 F 988

1458 M/S

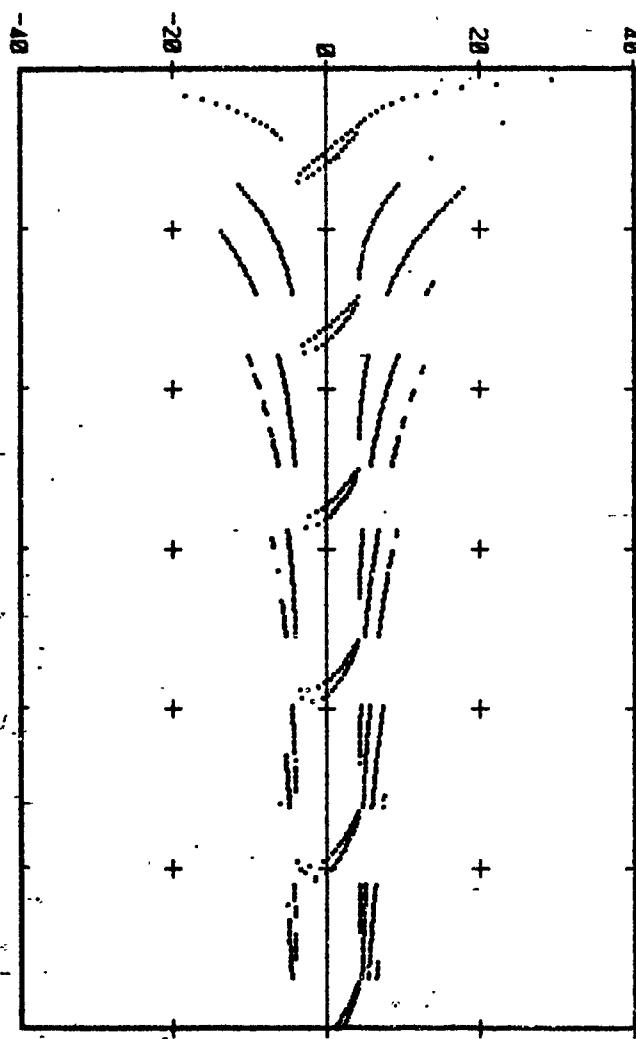
1508

1558

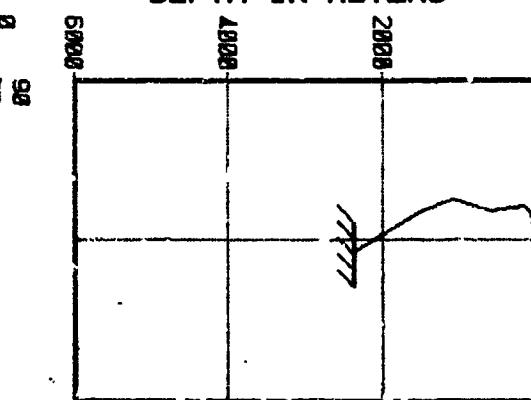
DB LOSS



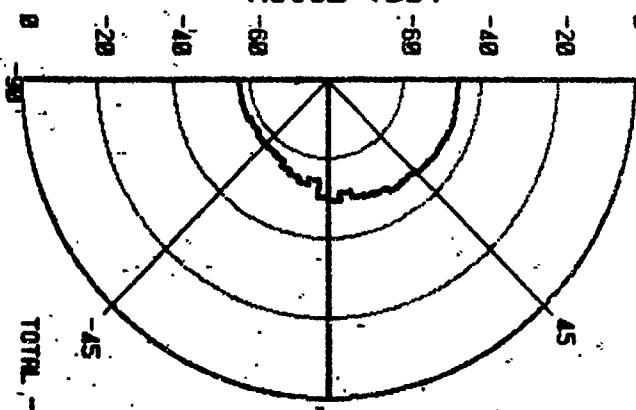
ARRIVAL ANGLE



DEPTH IN METERS

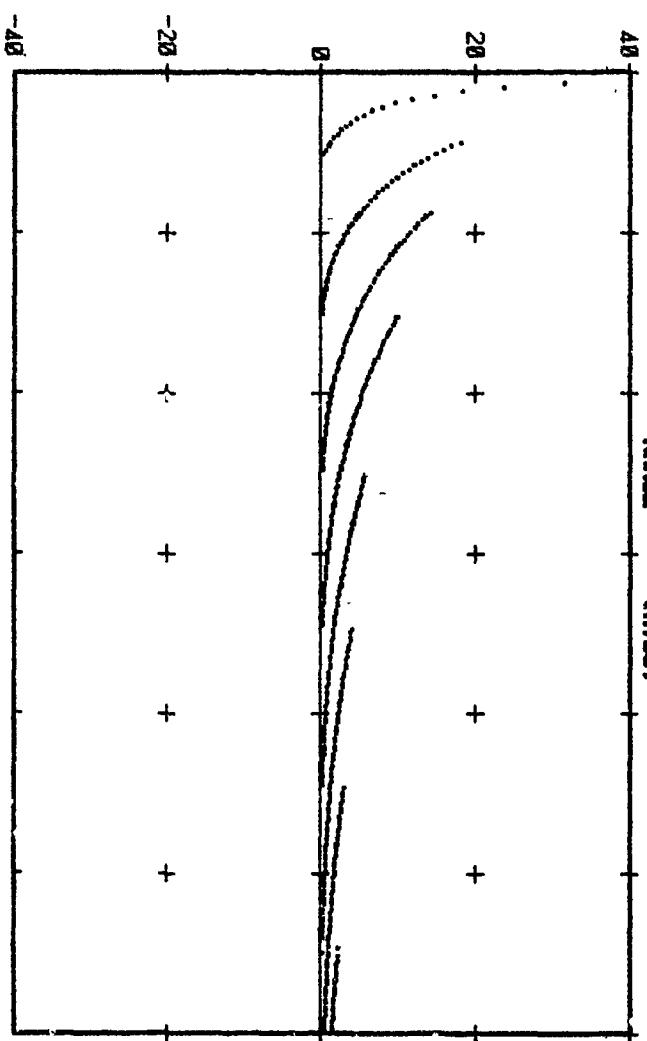


NOISE (DB)

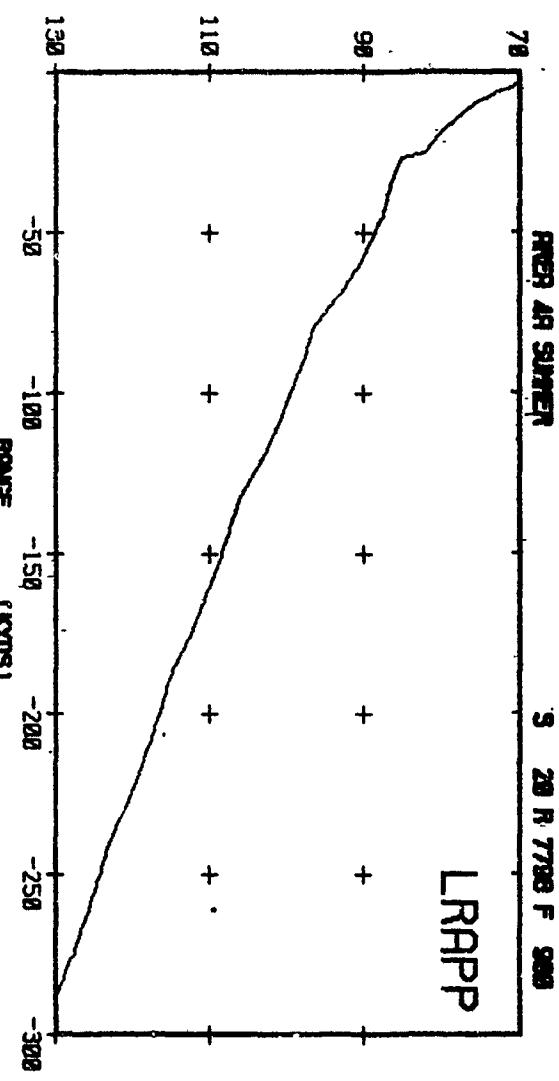


TOTAL -39.2 dB

ARRIVAL ANGLE



DB LOSS



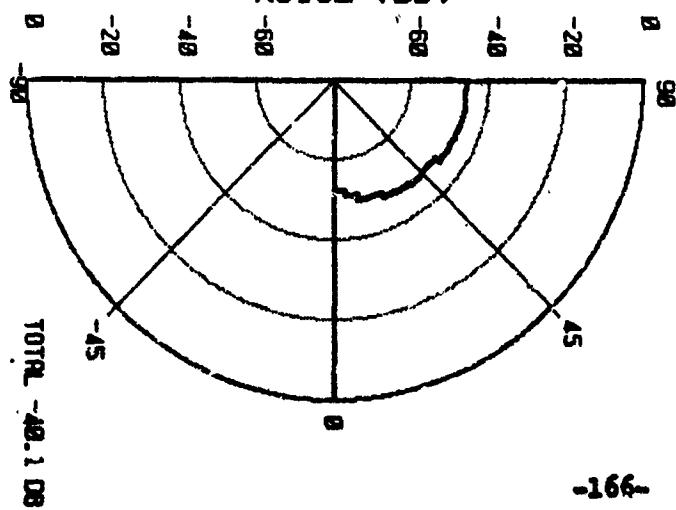
LRAAPP

REC AIR SUMMER

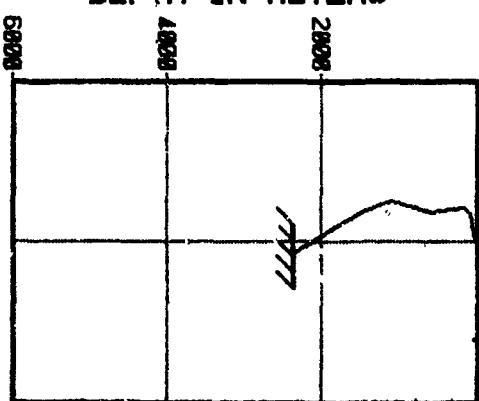
S 20 R 7788 F 988

1450 M/S 1500 1550

NOISE (DB)



DEPTH IN METERS



TOTAL -40.1 DB

70

FREE AIR SUMMER
S 52 R 7788 F 988

S 52 R 7788 F 988

1450 M/S 1580

1580

1550

LRAAPP

DB LOSS

130
110
90
70

6000
4000

DEPTH IN METERS

2000

ARRIVAL ANGLE

-10

-20

20

40

B

+

+

+

+

+

+

+

+

130

110

90

70

+

+

+

+

+

+

+

+

+

+

NOISE (DB)

0

-10

-20

-30

-40

-50

-60

-70

-80

-90

-100

-110

-120

-130

-140

-150

-160

-170

-180

-190

-200

-210

-220

-230

-240

-250

-260

-270

-280

-290

-300

-310

-320

-330

-340

-350

-360

-370

-380

-390

-400

-410

-420

-430

-440

-450

-460

-470

-480

-490

-500

-510

-520

-530

-540

-550

-560

-570

-580

-590

-600

-610

-620

-630

-640

-650

-660

-670

-680

-690

-700

-710

-720

-730

-740

-750

-760

-770

-780

-790

-800

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-880

-890

-900

-910

-920

-930

-940

-950

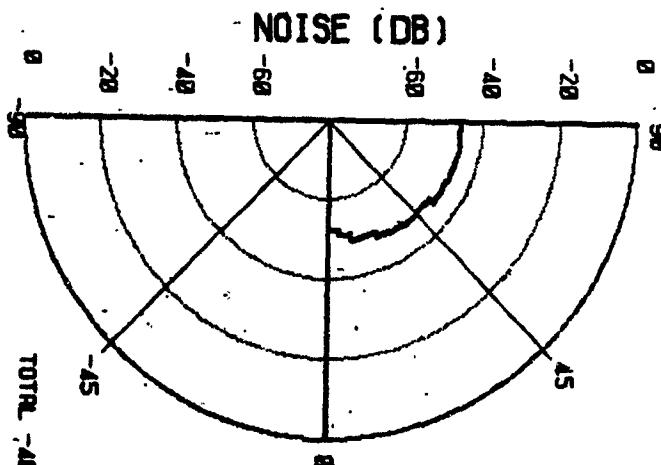
-960

-970

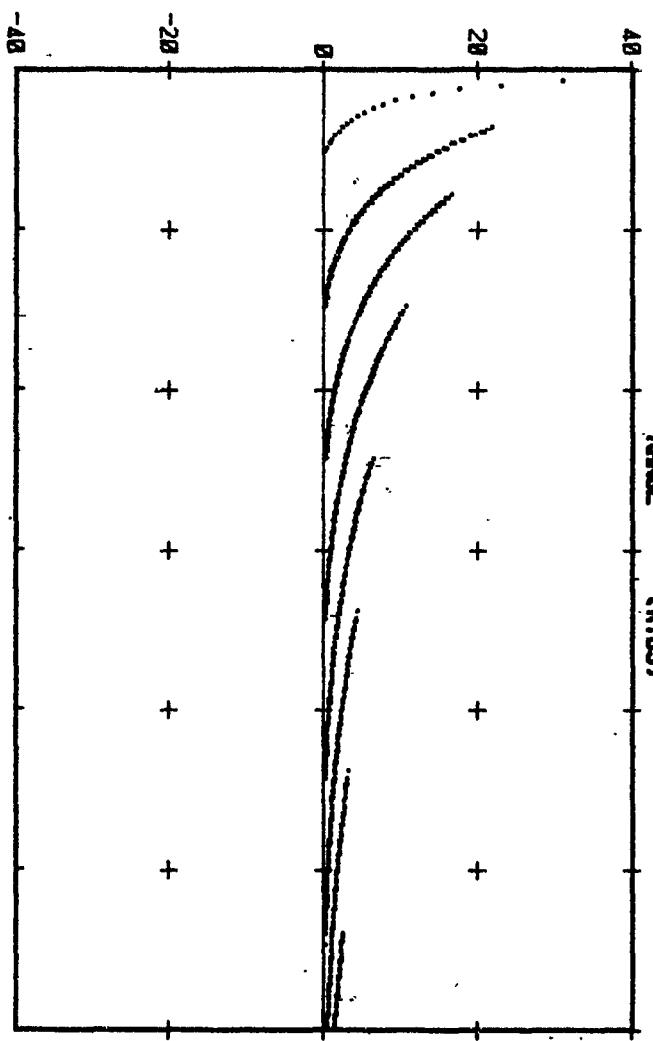
-980

-990

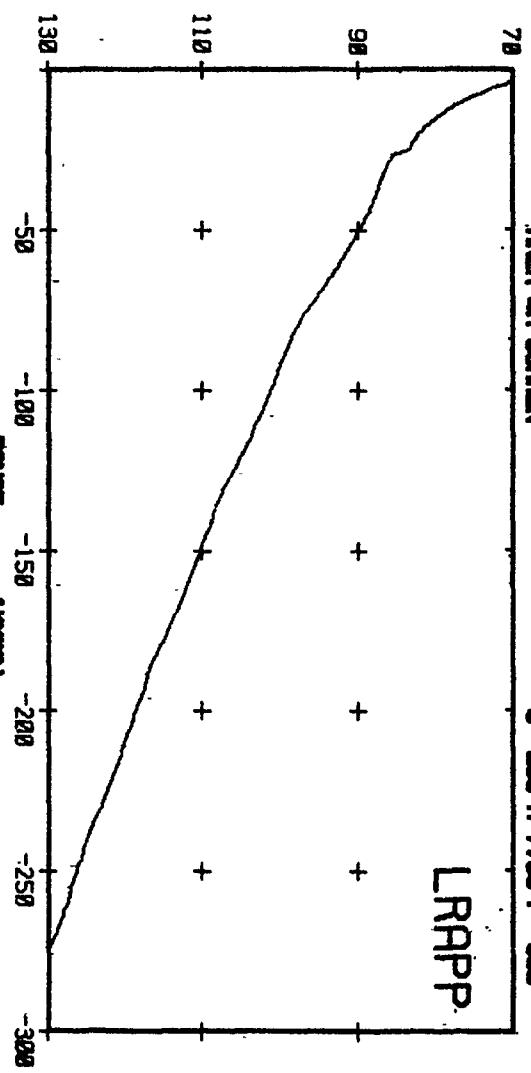
-1000



ARRIVAL ANGLE



DB LOSS



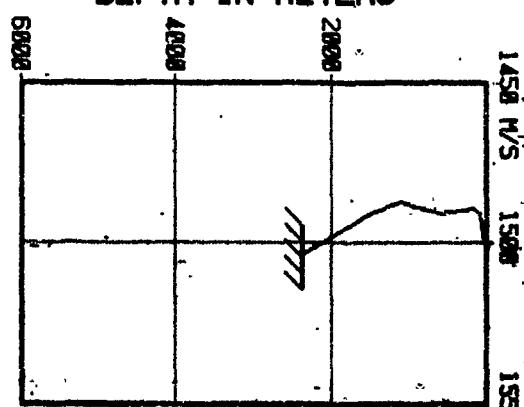
PRED 4A SUMMER

S 233 R 778 F 888

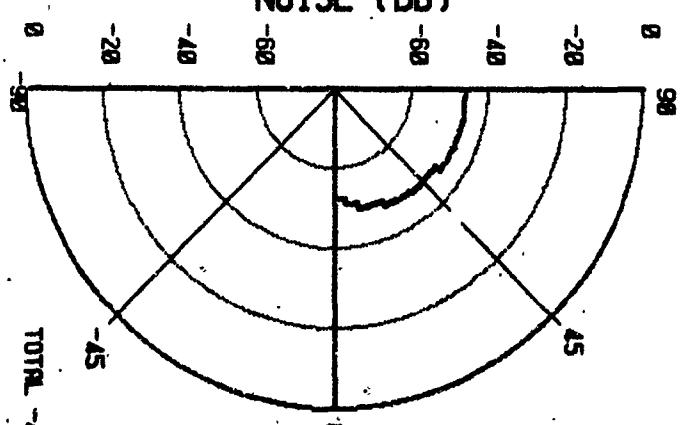
LRAFP

1458 N/S 1588 1558

DEPTH IN METERS



NOISE (DB)

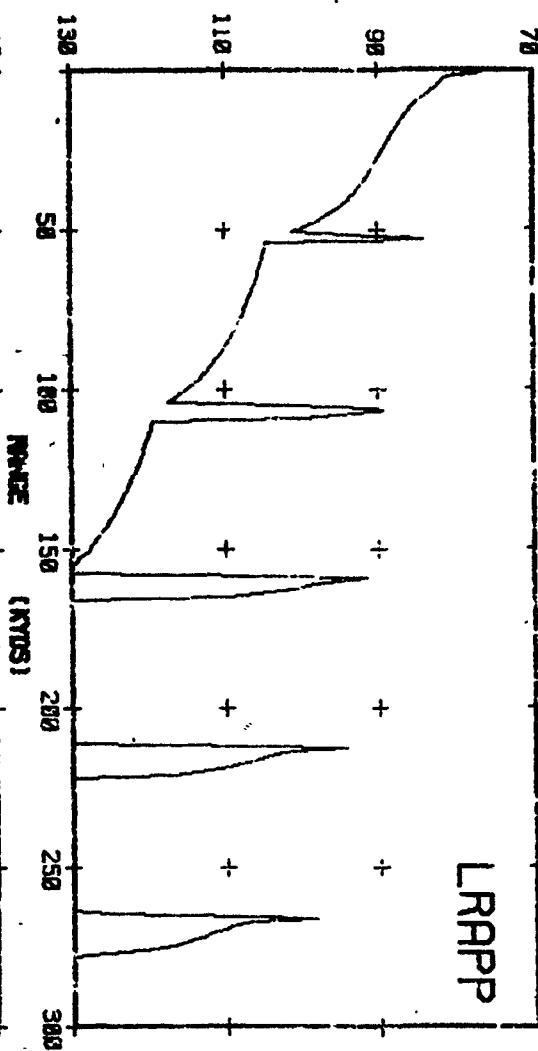


TOTAL - 40. 1. 88

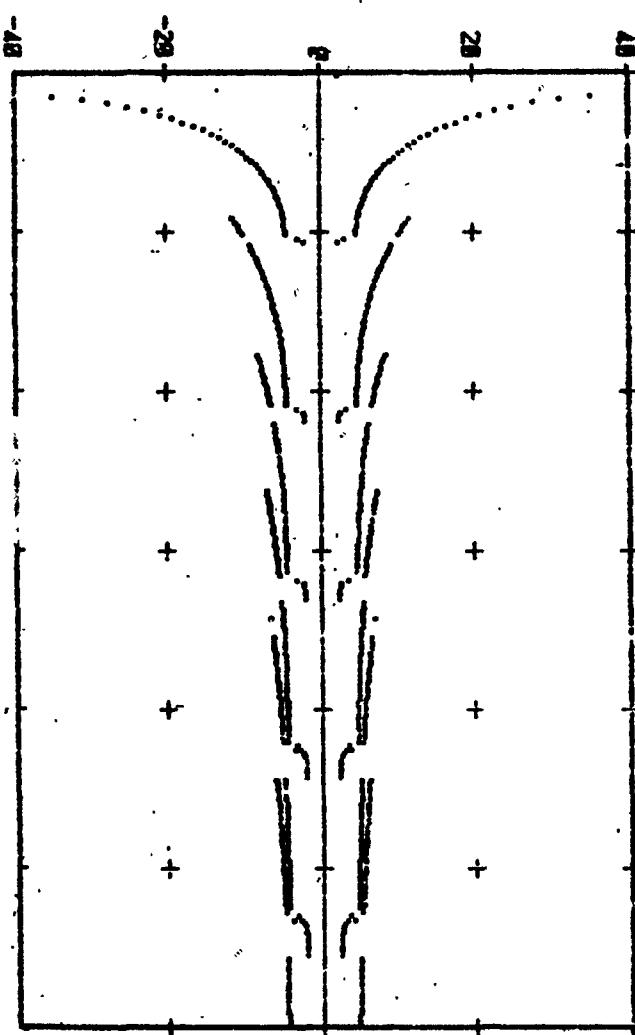
70 AREA A4 SUMMER S 20 R 69 F 1288

LRAPP

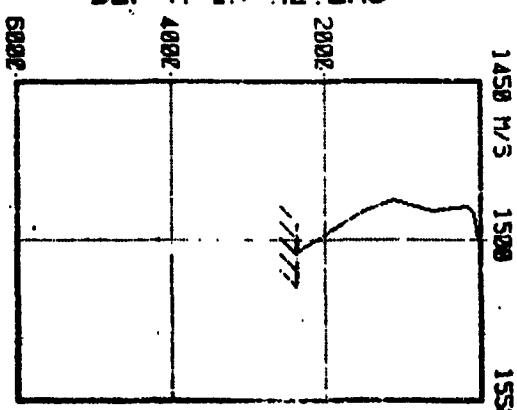
DB LOSS



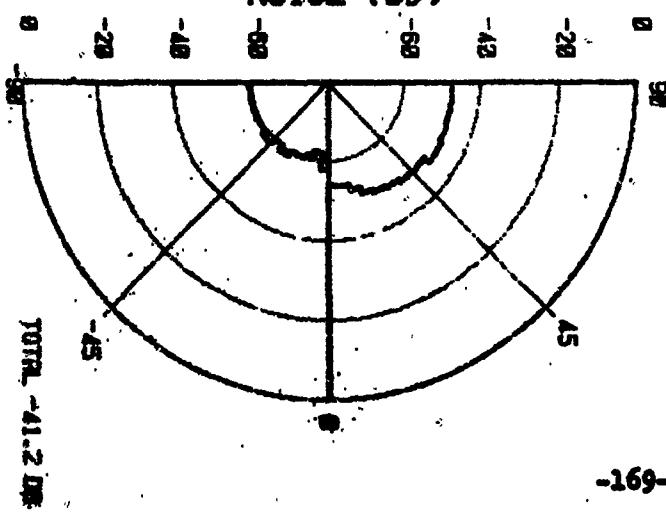
ARRIVAL ANGLE



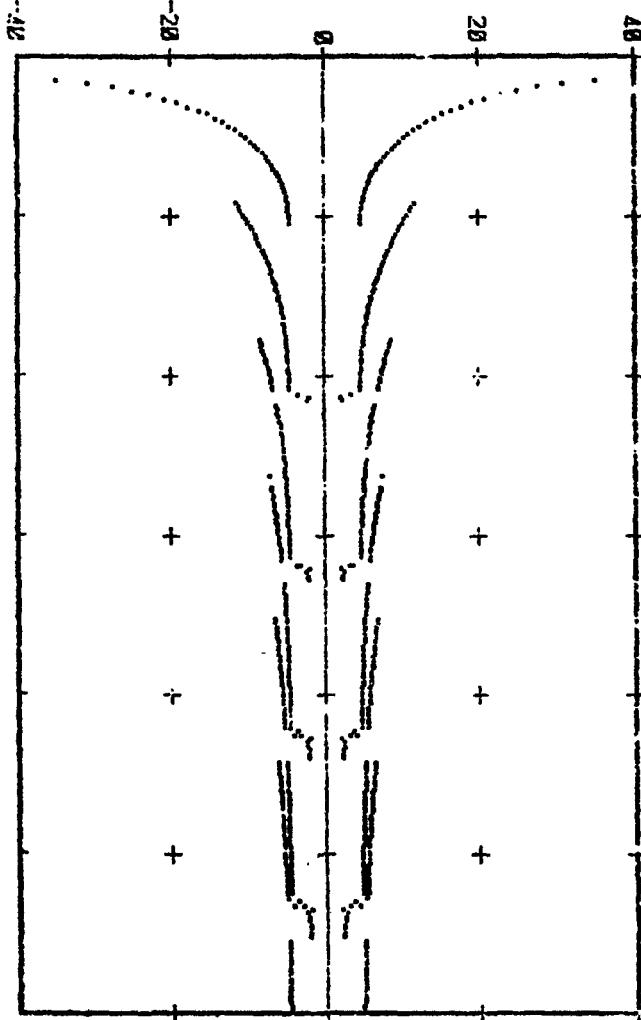
DEPTH IN METERS



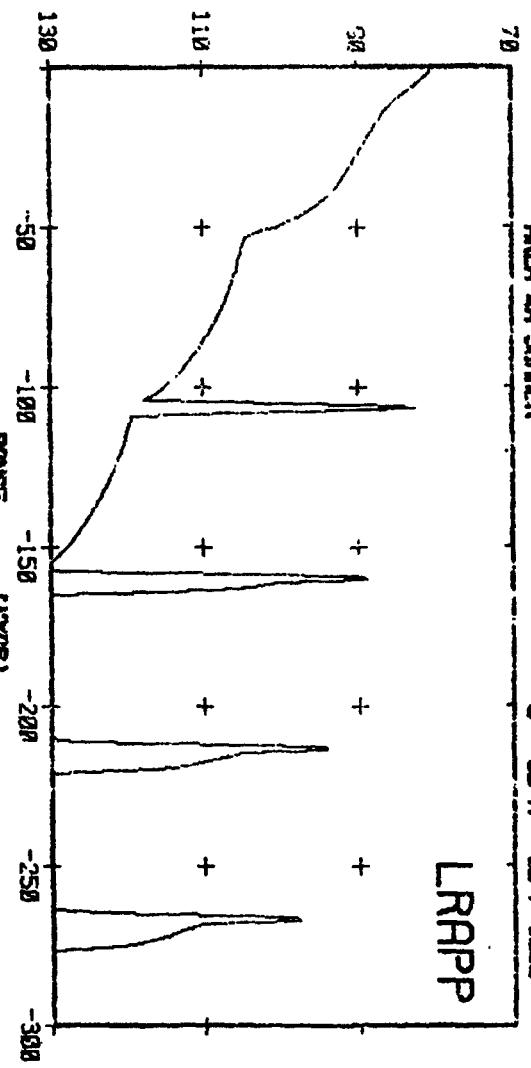
NOISE (DB)



ARRIVAL ANGLE



DB LOSS

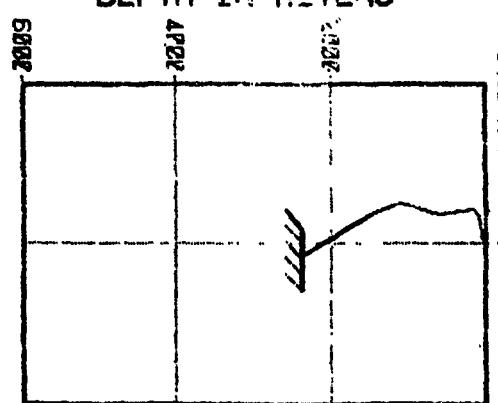


FREQUENCIES
S S R S F 1200

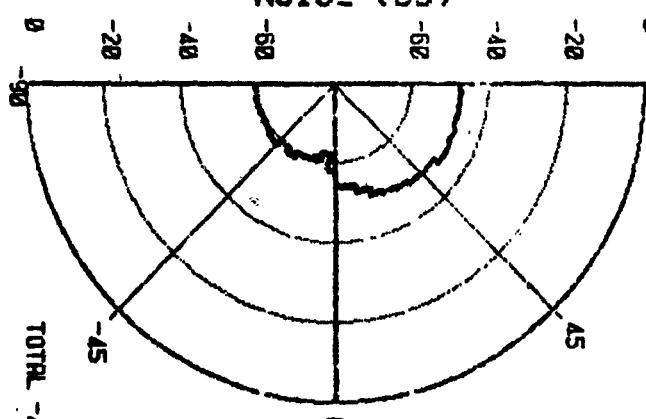
LRAAPP

1450 M/S 1500 1550

DEPTH IN METERS



NOISE (DB)



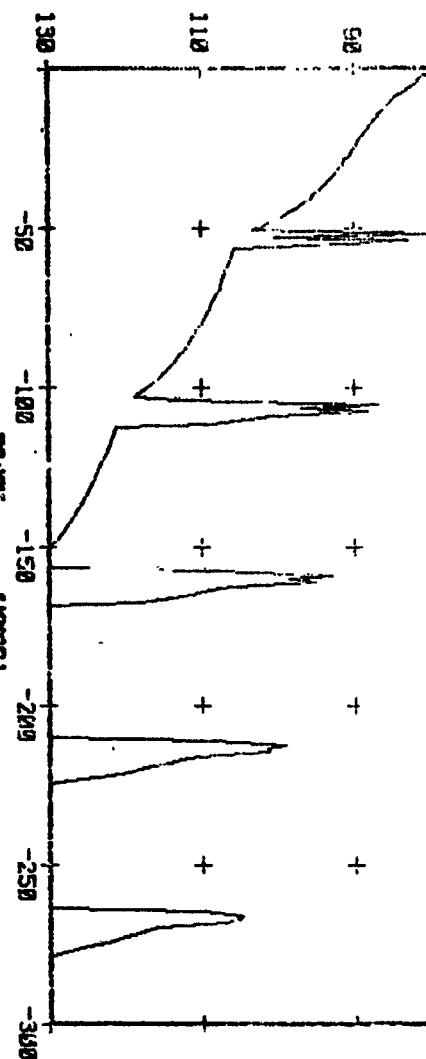
TOTAL -41.2 DB

RIVER AR SIMMER S 233 R 63 F 1200

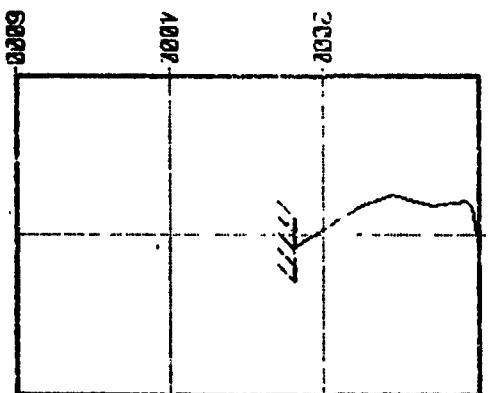
1.450 M/S 1520 1550

L RAPP

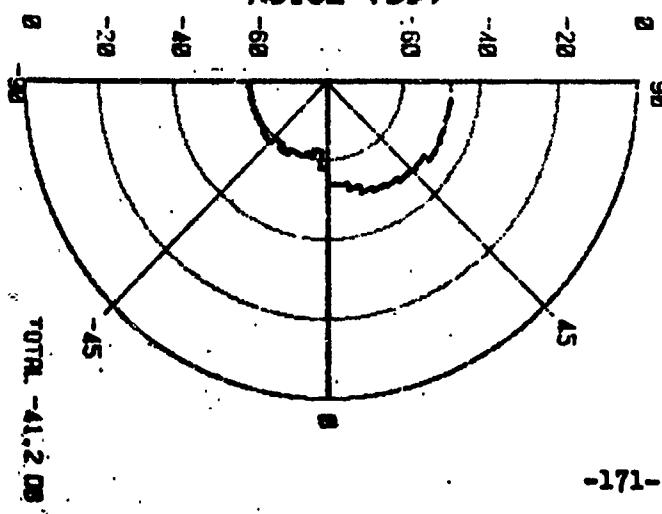
DB LOSS



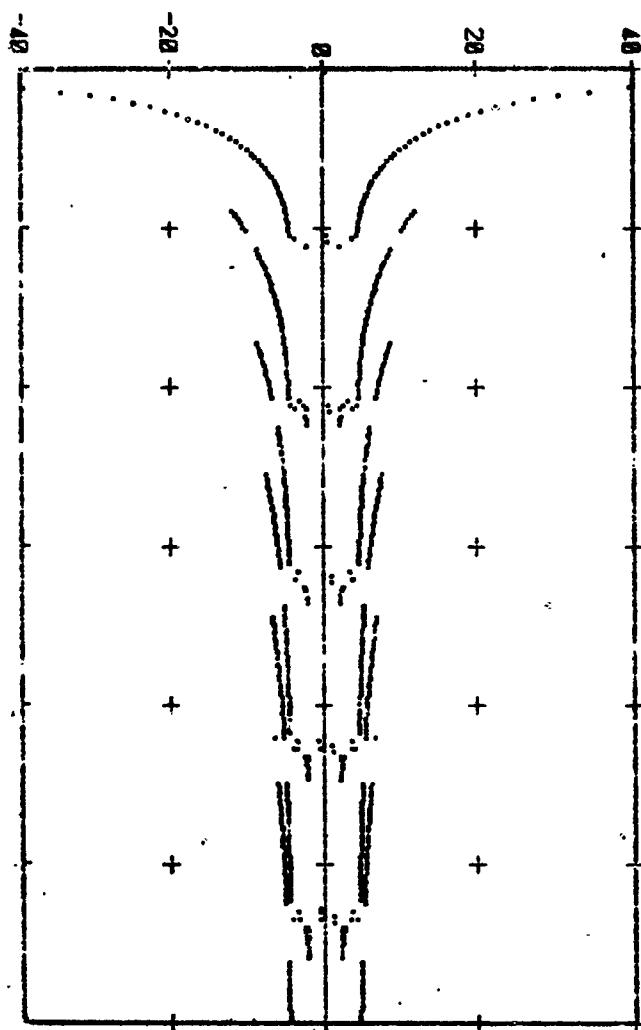
DEPTH IN METERS



NOISE (DB)



ARRIVAL ANGLE



70

AFTER AIR SUMMER

S 28° R 133° F 1238

1458 M/S

1500

1558

90

DB LOSS

130
120
110
100
90
80
70

NOISE (KHZ)

6000

5000

4000

3000

2000

1000

0

90

60

30

0

LRAPP

DEPTH IN METERS

2000

1500

1000

500

0

ARRIVAL ANGLE

-10

0

10

20

30

40

50

60

70

80

90

100

110

120

130

140

150

160

170

180

190

200

210

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230

240

250

260

270

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2890

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2950

2960

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2980

2990

3000

3010

3020

3030

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3090

3100

3110

3120

3130</

78

ARR AIR SUMMER

S 59 R 133 F 1200

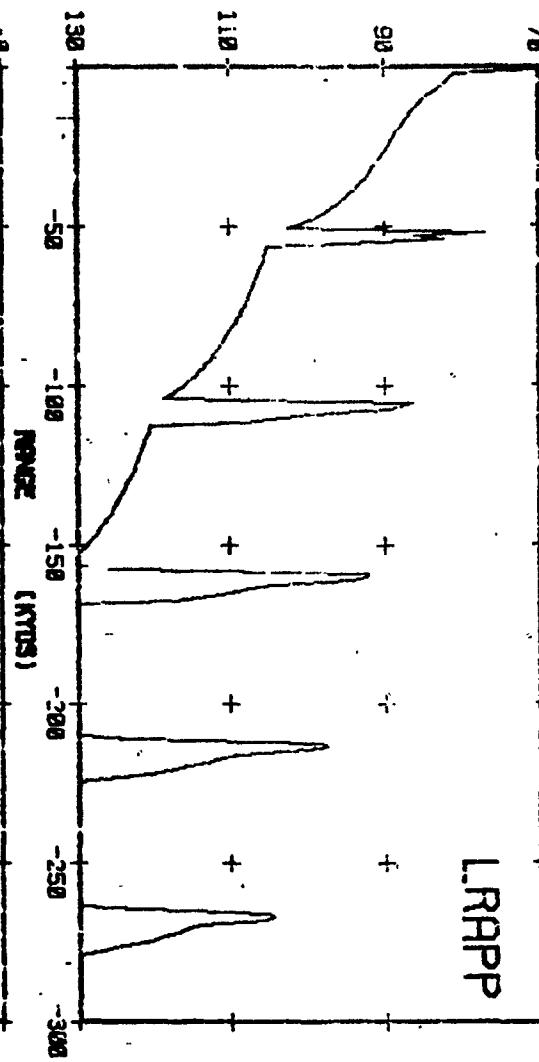
1450 M/S

1500

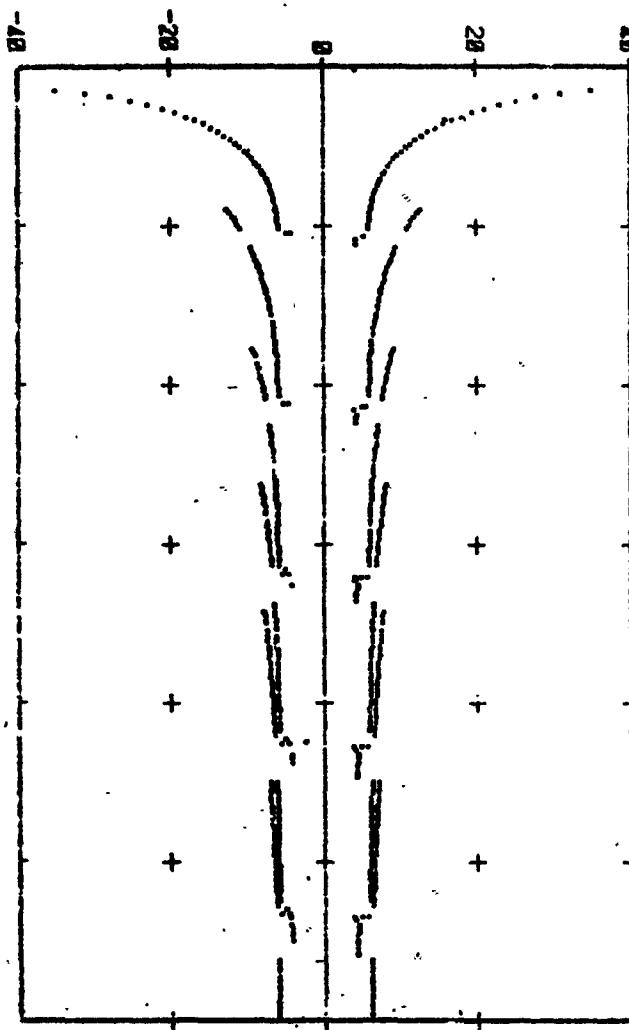
1550

LRAPP

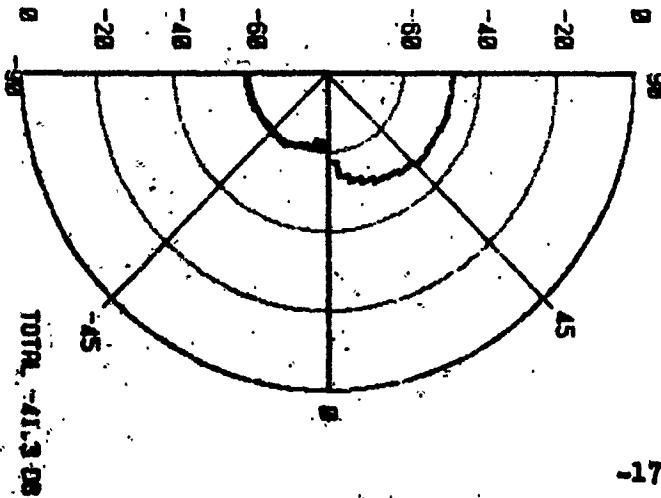
DB LOSS



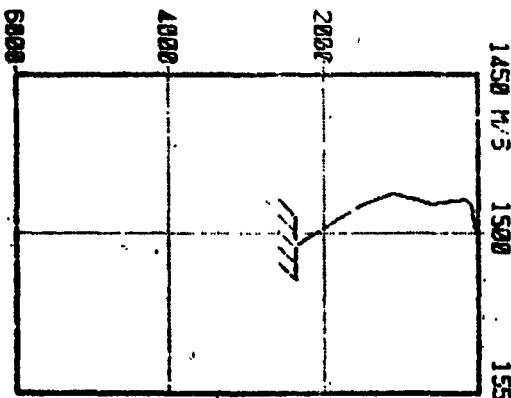
ARRIVAL ANGLE



NOISE (DB)

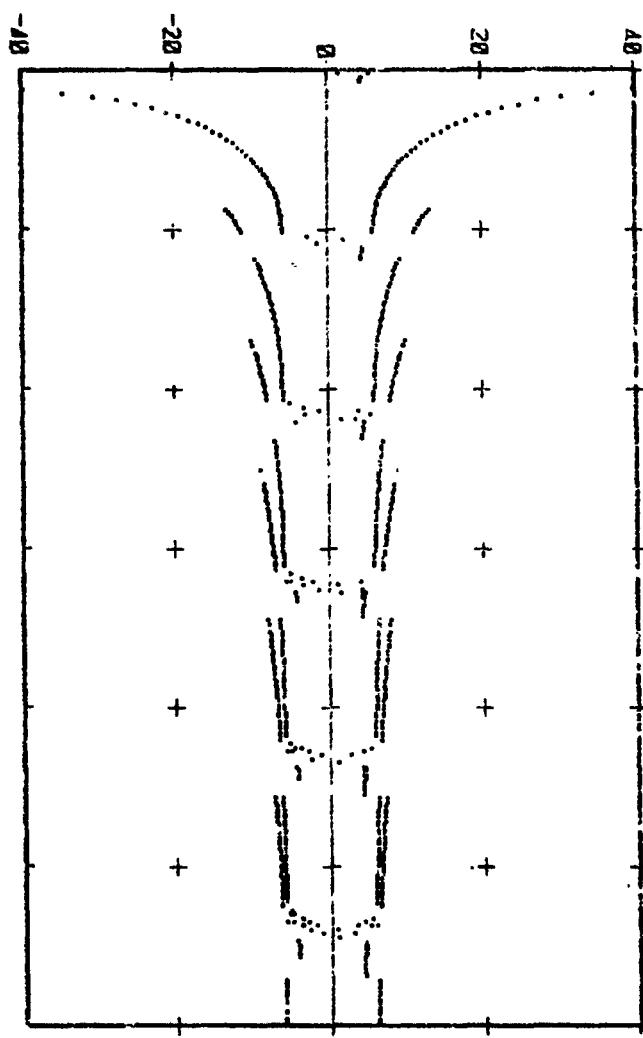


DEPTH IN METERS

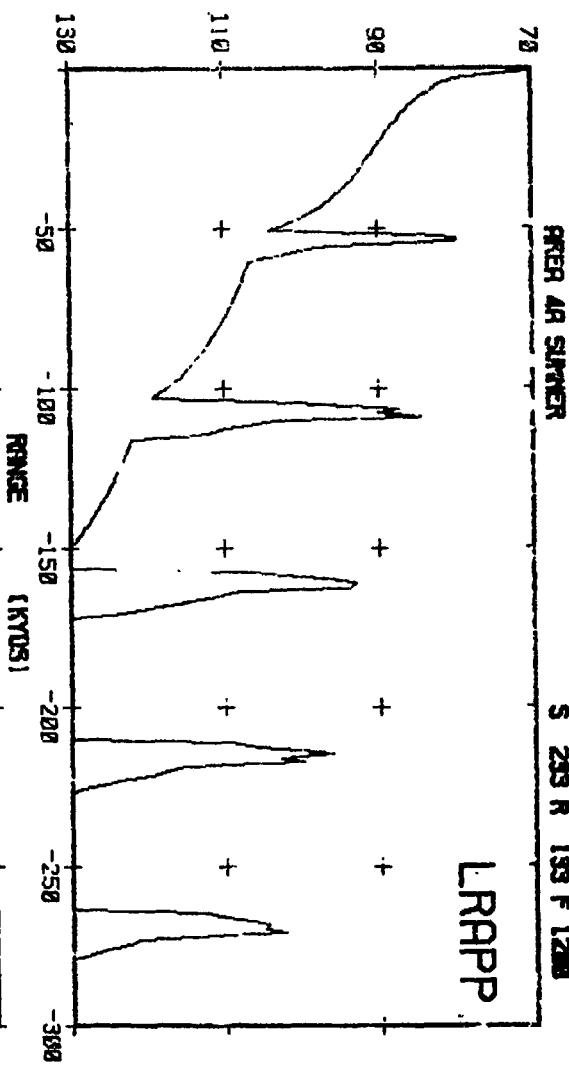


TOTAL - 11.3 dB

ARRIVAL ANGLE

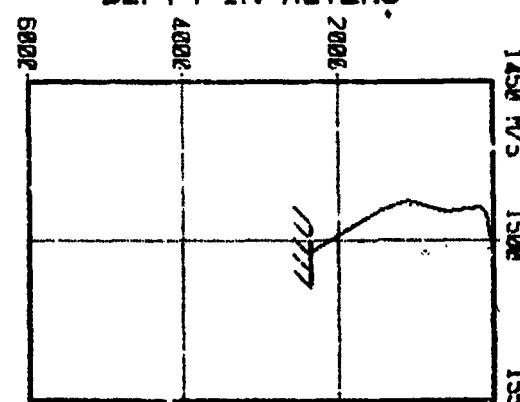


DR LOSS

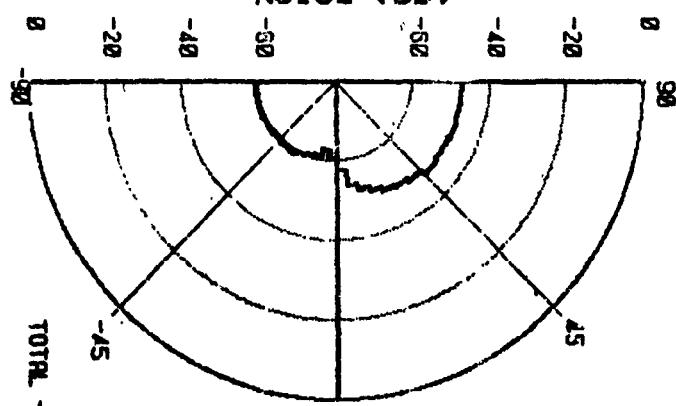


S 233 R 133 F 1200
L RAPP

DEPTH IN METERS



NOISE (DB)



78

RER 4R SUMMER

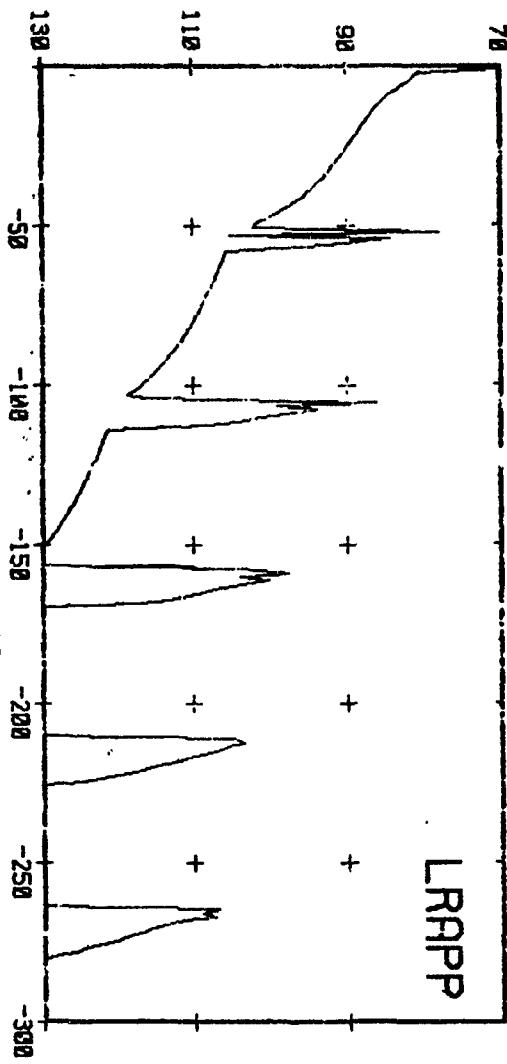
S 20 R 300 F 1200

1450 M/S 1500 1550

LRAPP

DB LOSS

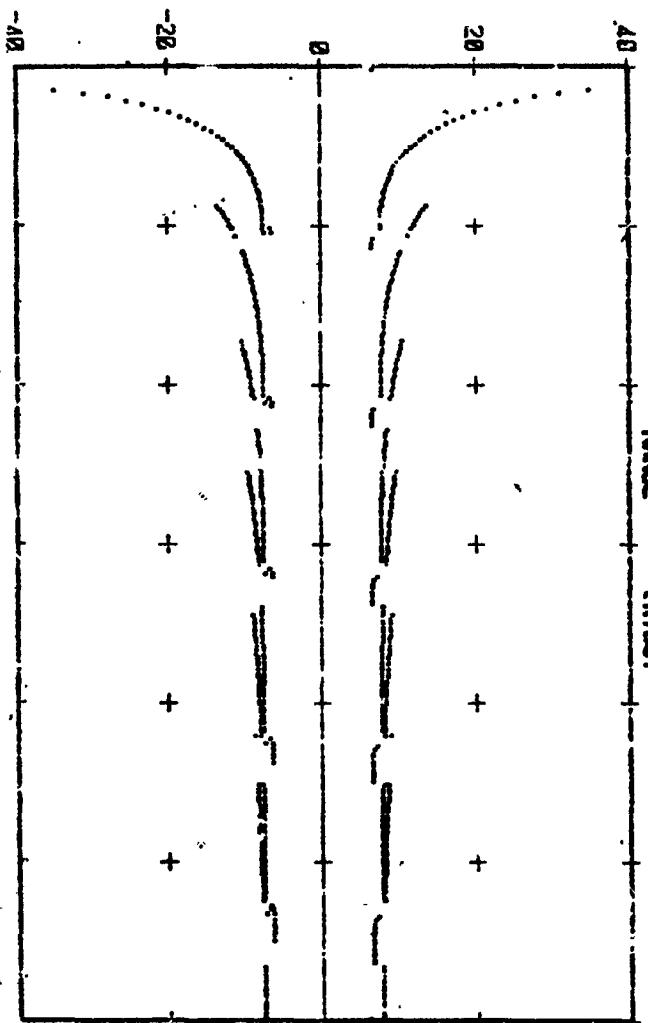
98



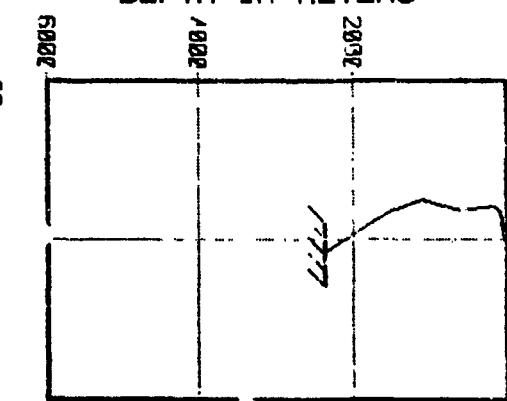
ARRIVAL ANGLE

20

-20



DEPTH IN METERS



NOISE (DB)

0

90

-20

-40

-60

-80

-100

-120

0

90

-20

-40

-60

-80

-100

-120

-140

-160

-180

-200

-220

-240

-260

-280

-300

-320

-340

-360

-380

-400

-420

-440

-460

-480

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-1000

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-1920

-1940

-1960

-1980

-2000

-2020

-2040

-2060

-2080

-2100

-2120

-2140

-2160

-2180

-2200

-2220

-2240

-2260

-2280

-2300

-2320

-2340

-2360

-2380

-2400

-2420

-2440

-2460

-2480

-2500

-2520

-2540

-2560

-2580

-2600

-2620

-2640

-2660

-2680

-2700

-2720

-2740

-2760

-2780

-2800

-2820

-2840

-2860

-2880

-2900

-2920

-2940

-2960

-2980

-3000

-3020

-3040

-3060

-3080

-3100

-3120

-3140

-3160

-3180

-3200

-3220

-3240

-3260

-3280

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-3800

-3820

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-3860

-3880

-3900

-3920

-3940

-3960

-3980

-4000

-4020

-4040

-4060

-4080

-4100

-4120

-4140

-4160

-4180

-4200

-4220

-4240

-4260

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-4300

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-4920

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-4960

-4980

-5000

-5020

-5040

-5060

-5080

-5100

-5120

-5140

-5160

-5180

-5200

-5220

-5240

-5260

-5280

-5300

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-5880

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-6000

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-6060

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-6300

78

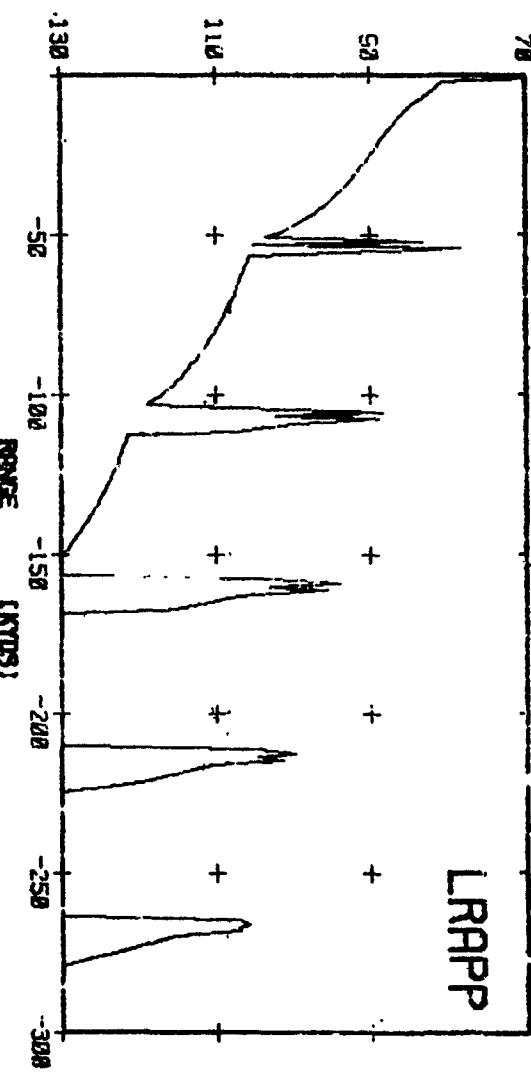
AREA 4A SUMMER

S S R S S F 1200

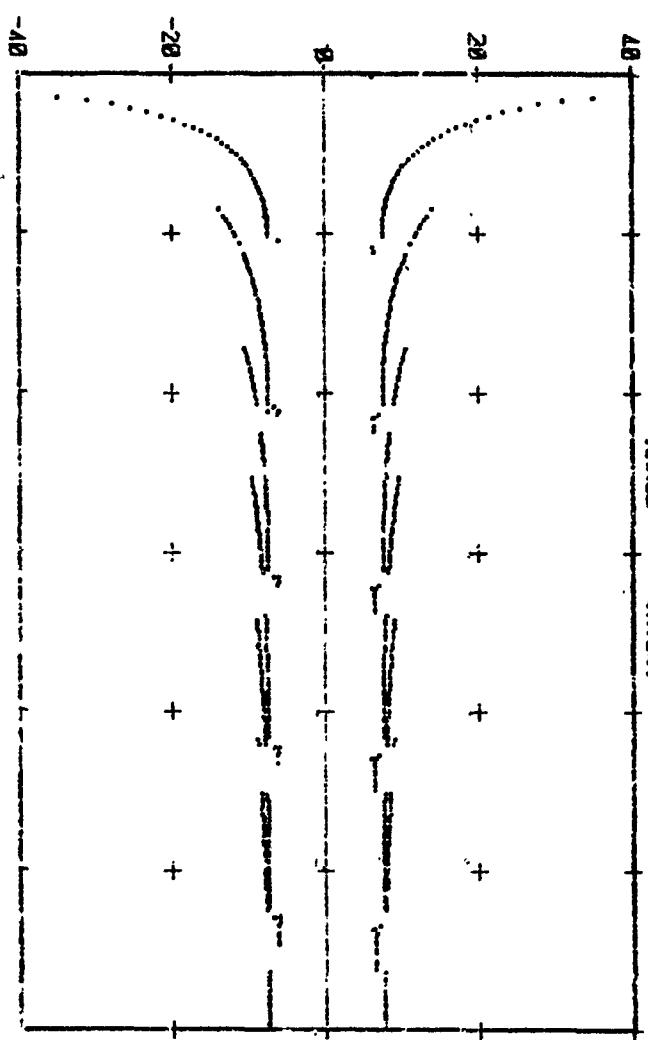
1453 M/S 1500 1550

LRAPP

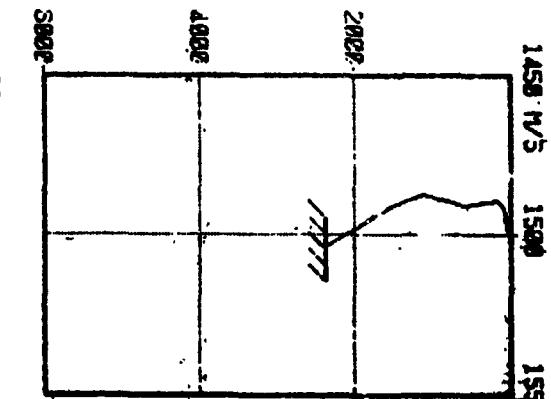
DB LOSS



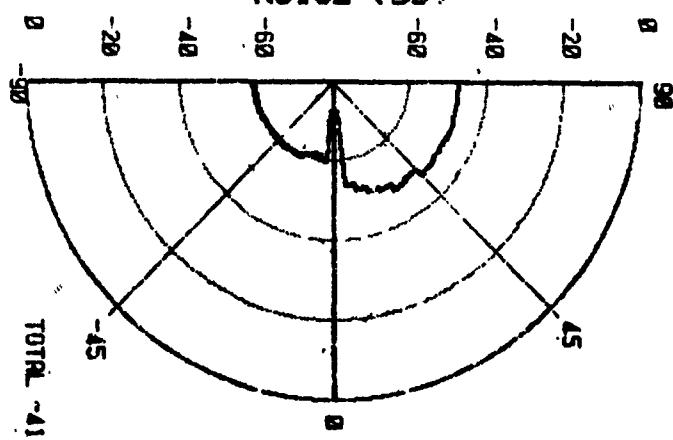
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)

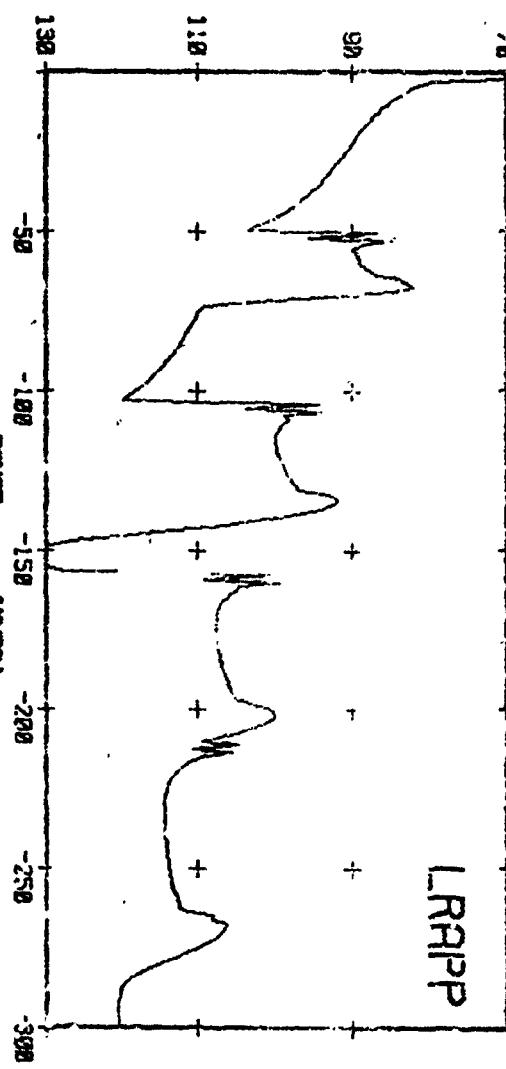


ANER AIR SICKEN

S 283 R 388 F 128

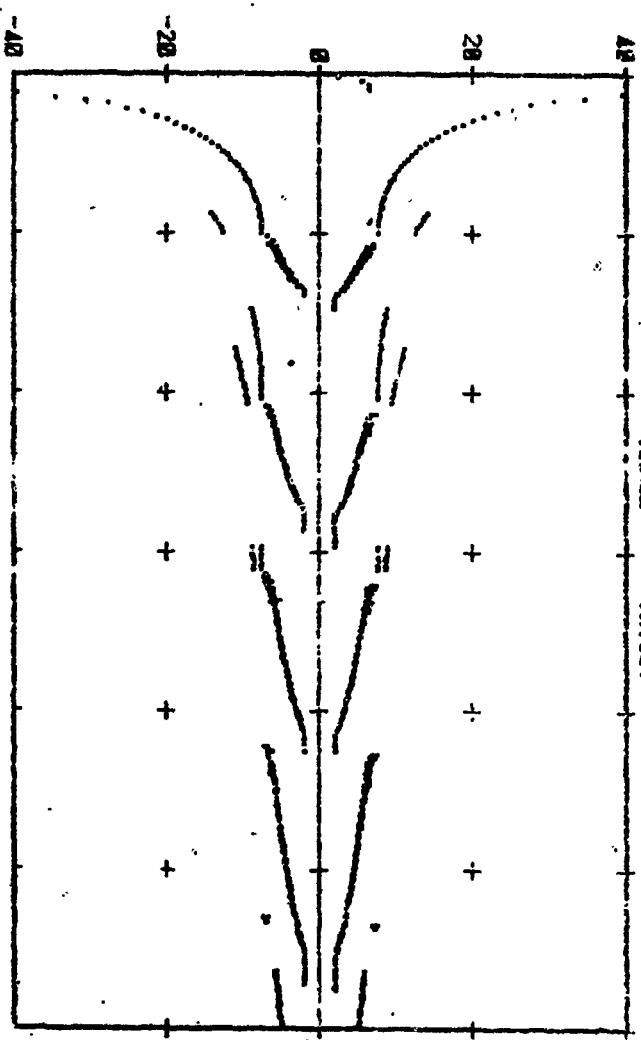
1450 Hz 1520 1550

DB LOSS

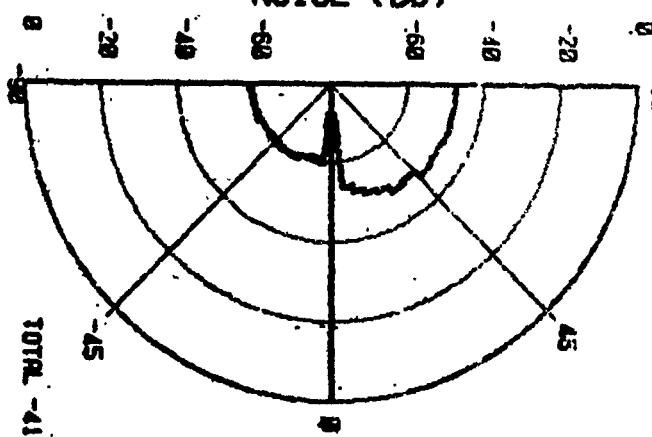


L.RAPP

ARRIVAL ANGLE

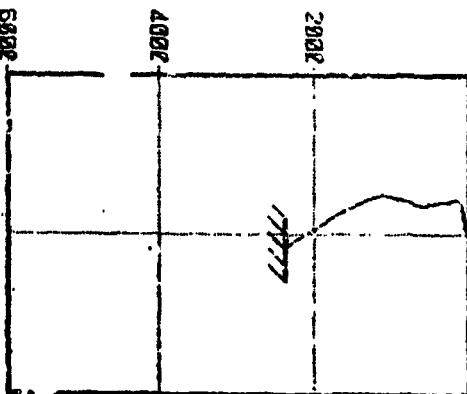


NOISE (DB)



TOTAL -41.4 DB

DEPTH IN METERS

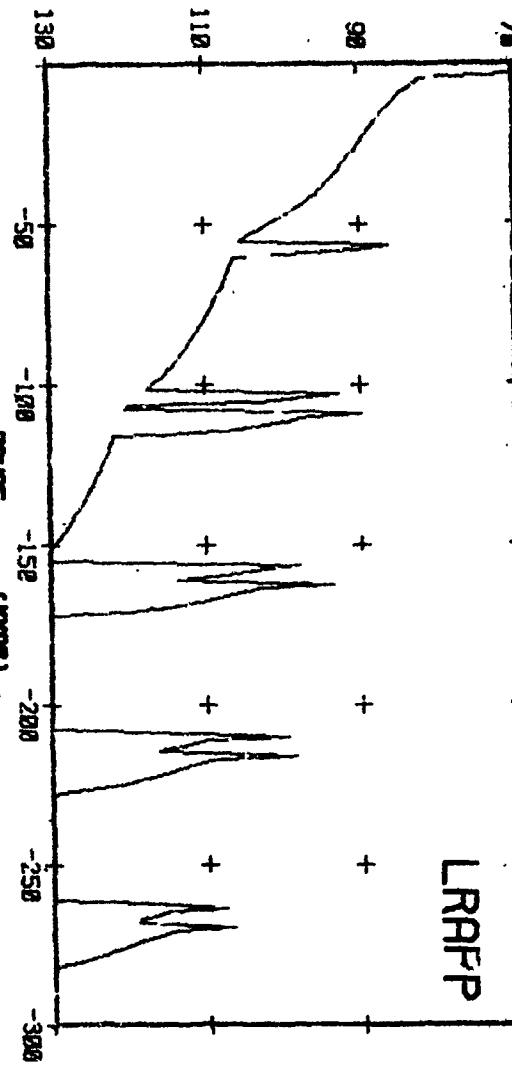


78
RIVER 46 SUMMER

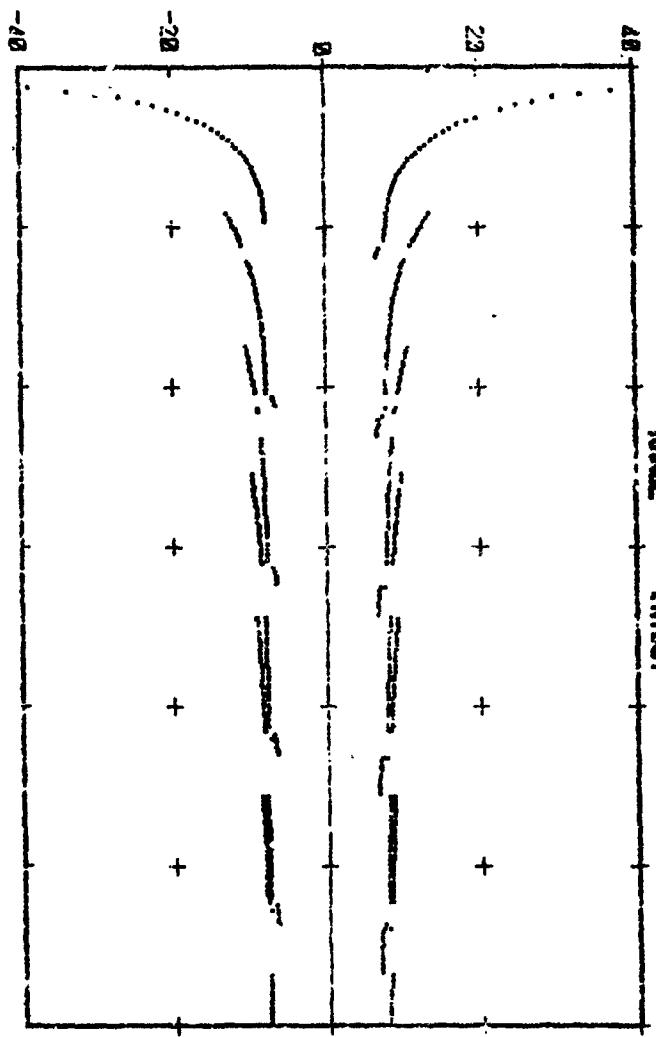
S 28 N 100 F 1200

LRAFP

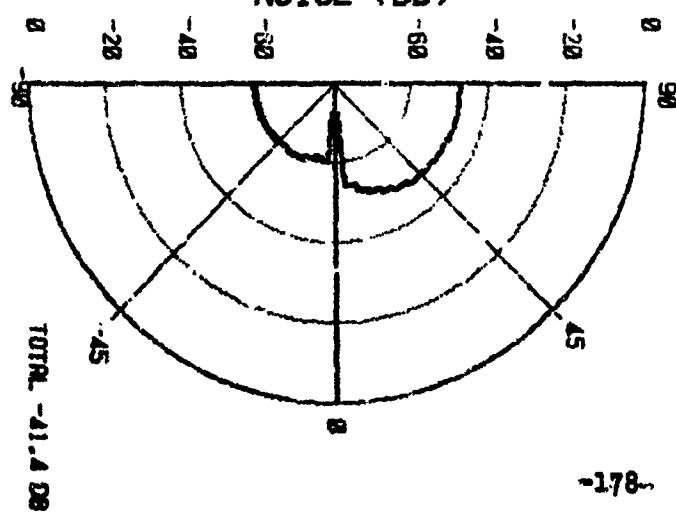
DB LOSS



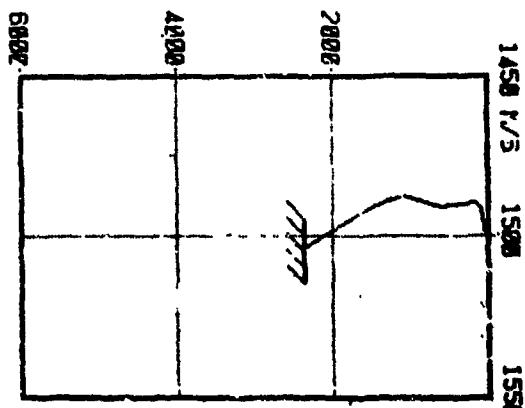
ARRIVAL ANGLE



NOISE (DB)



DEPTH IN METERS



78

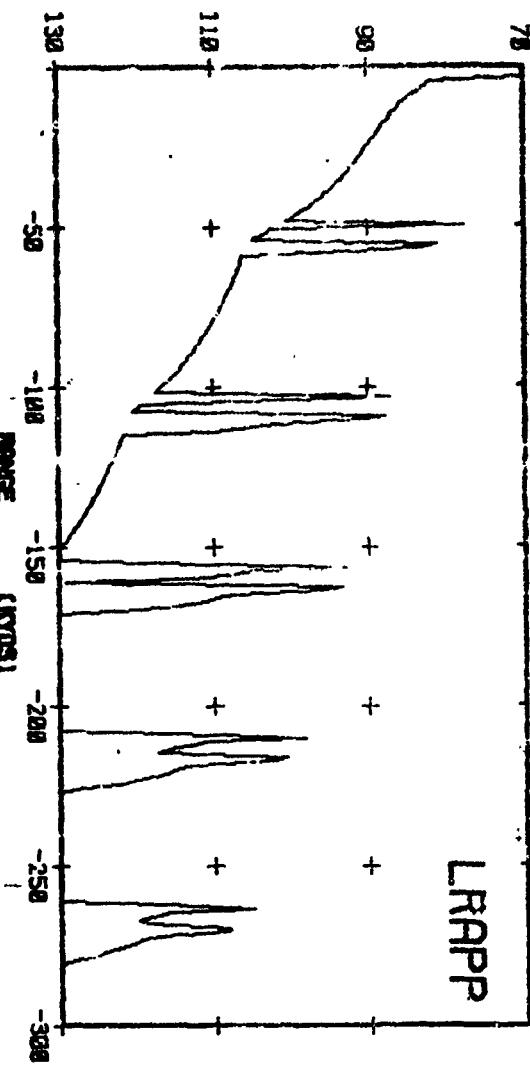
RIVER OR SAWYER

3 50 R 100 F 120-

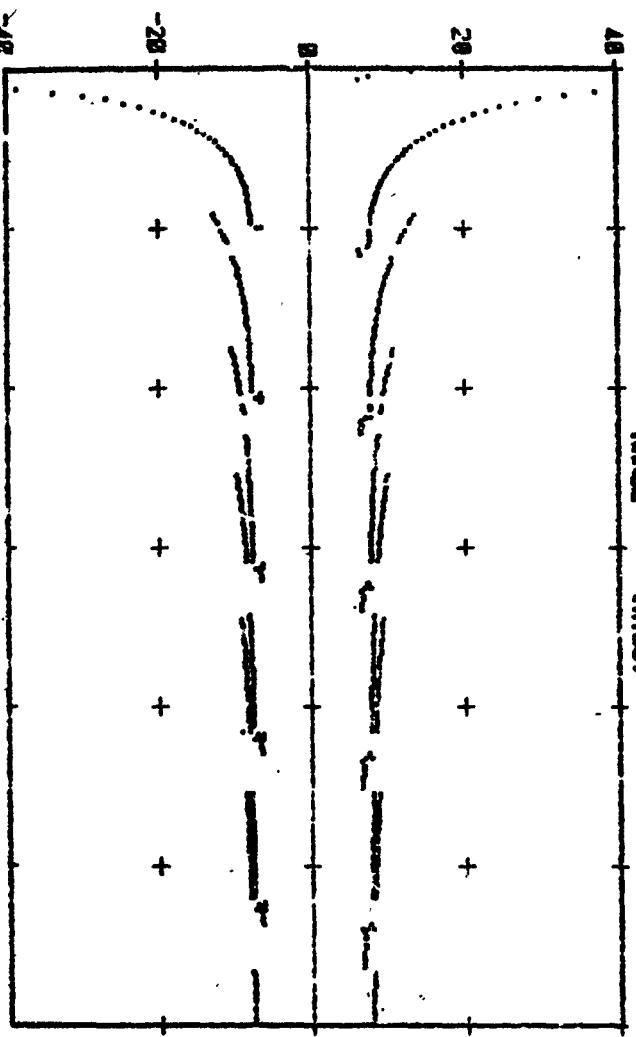
1450 ft/s 1500 1550

LRAPP

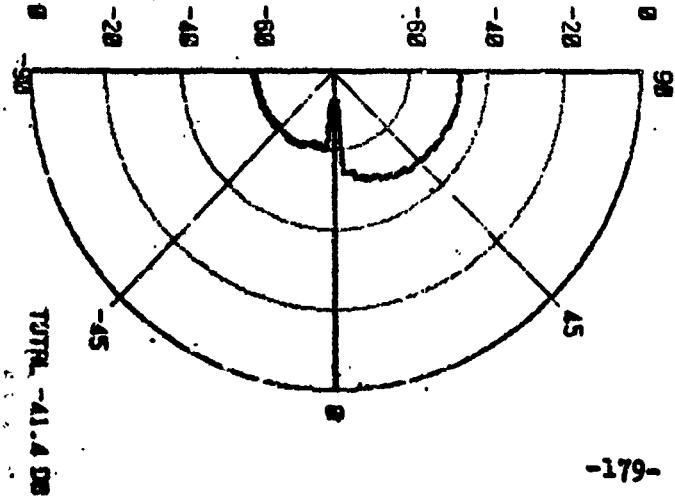
DB LOSS



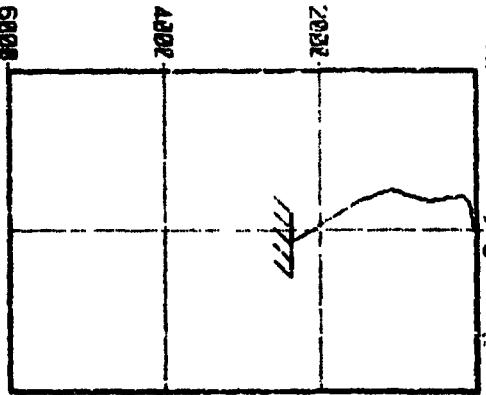
ARRIVAL ANGLE



NOISE (DB)



DEPTH IN METERS



78

RDR 49 SUMMER

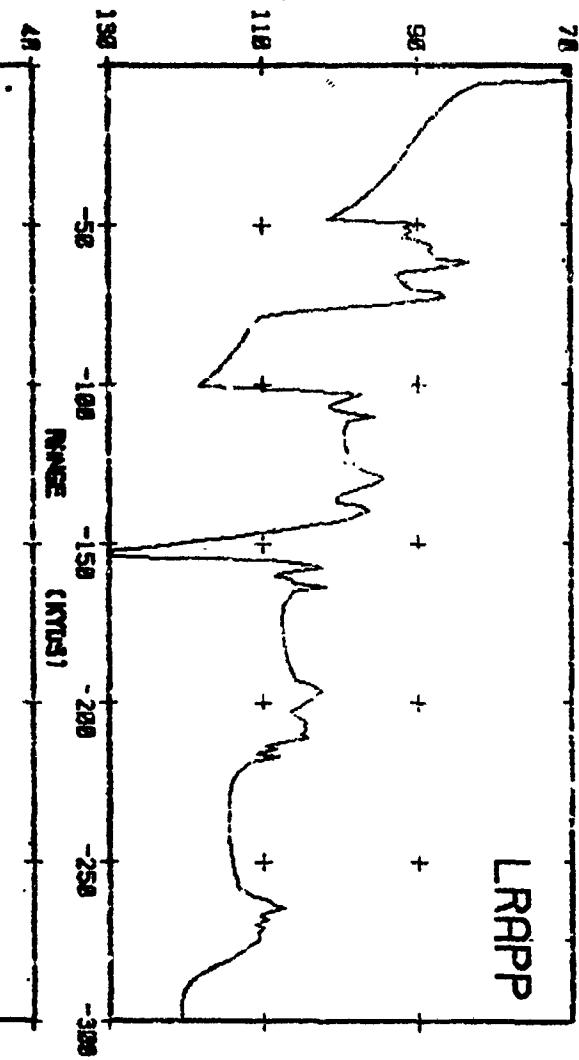
S 259 R 1169 F 1258

1459 Hz 1558

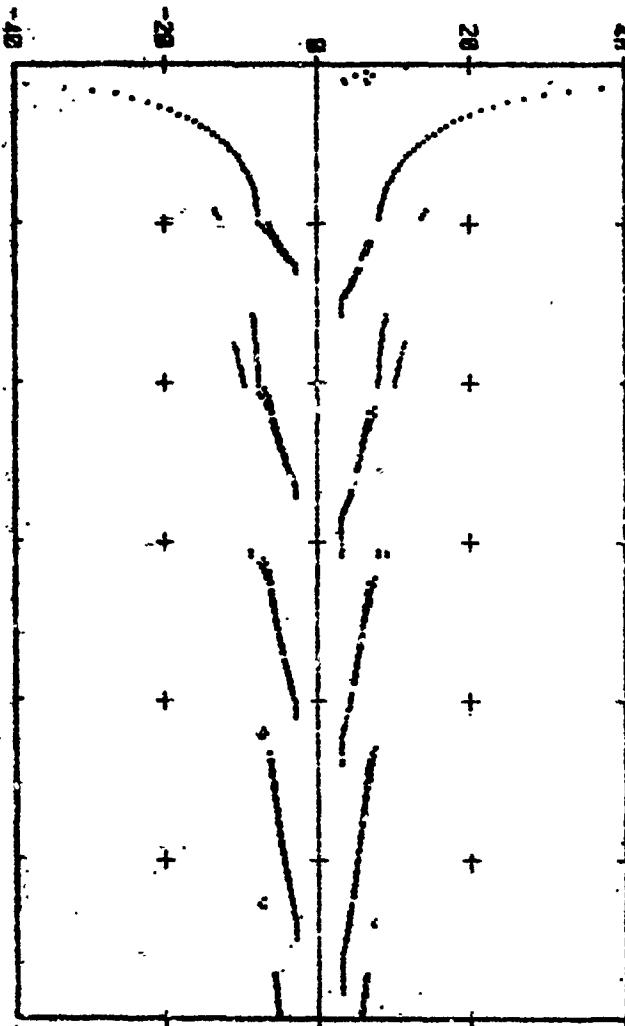
1558

LRAIPP

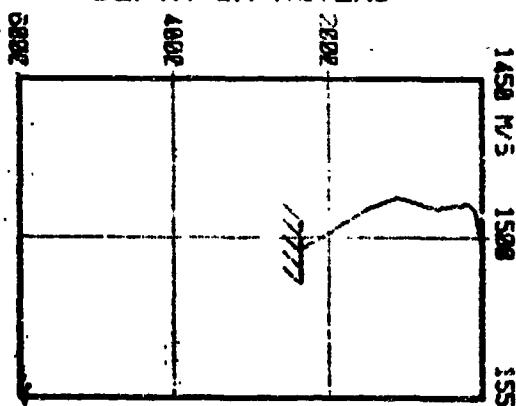
DB LOSS



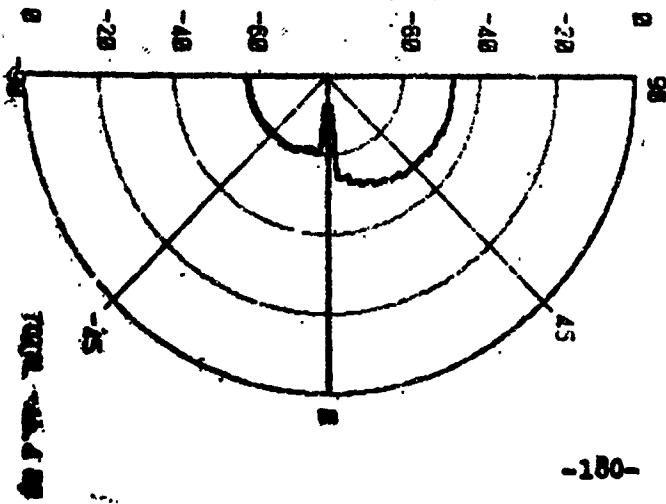
ARRIVAL ANGLE

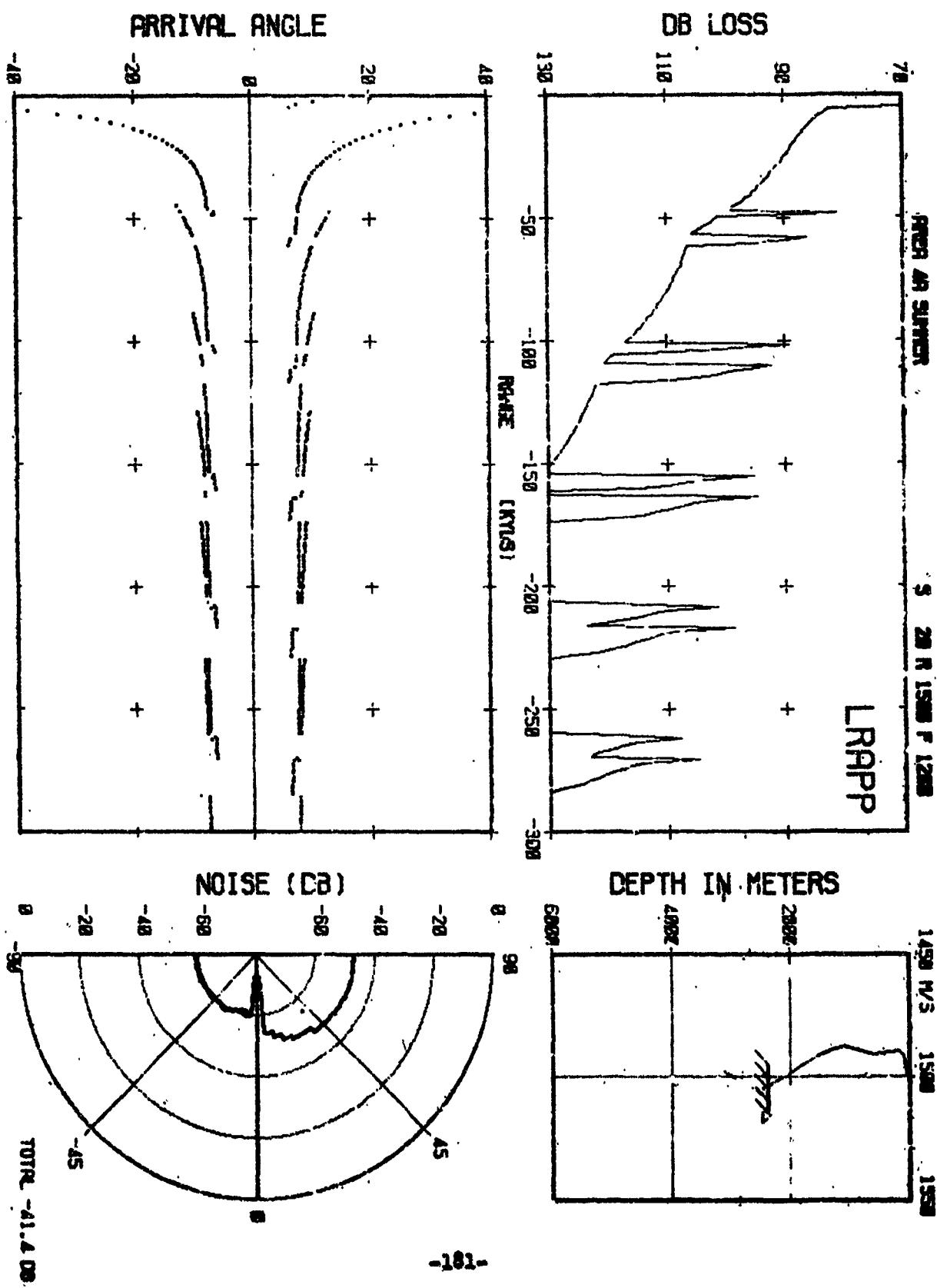


DEPTH IN METERS



NOISE (DB)





70

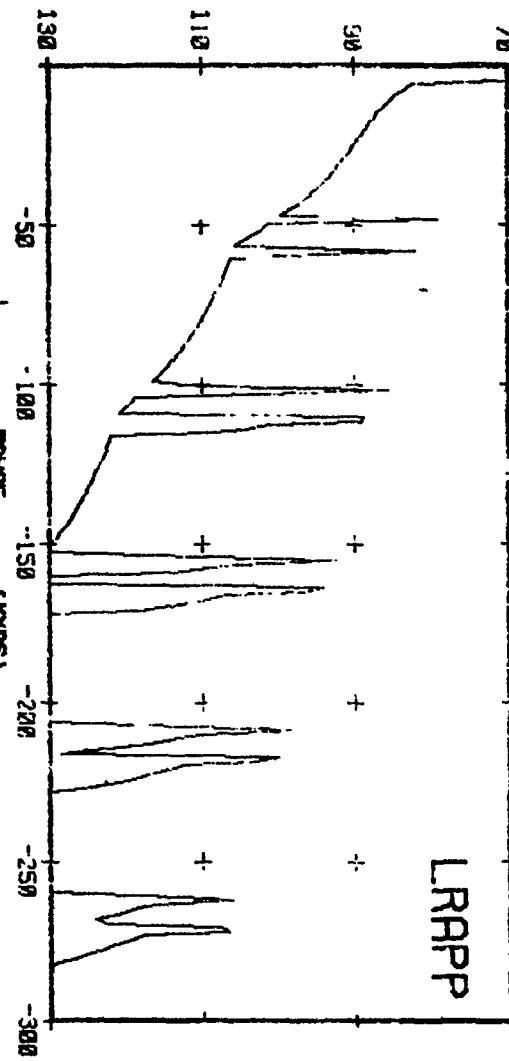
REC AIR SUMMER

S 59 R 1500 F 1200

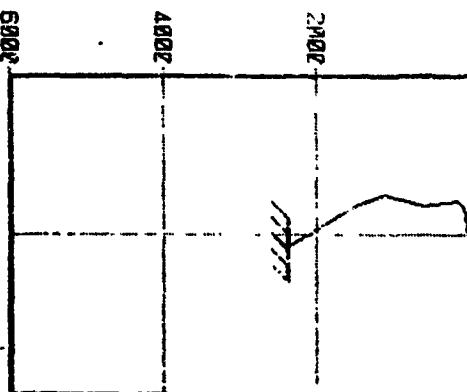
1450 M/S 1520 1550

LRAPP

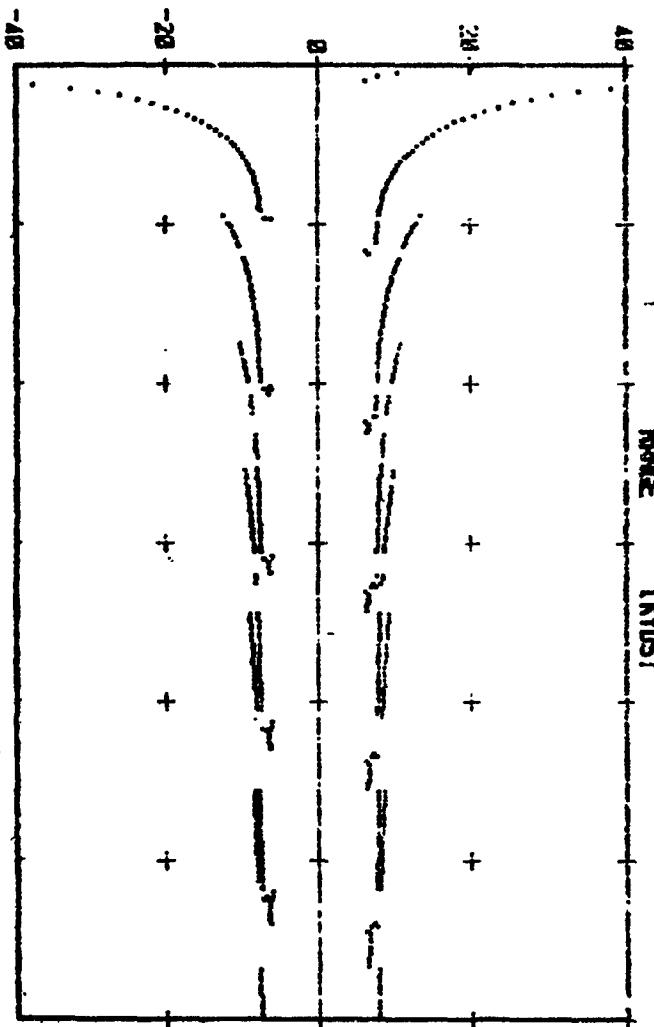
D6 LOSS



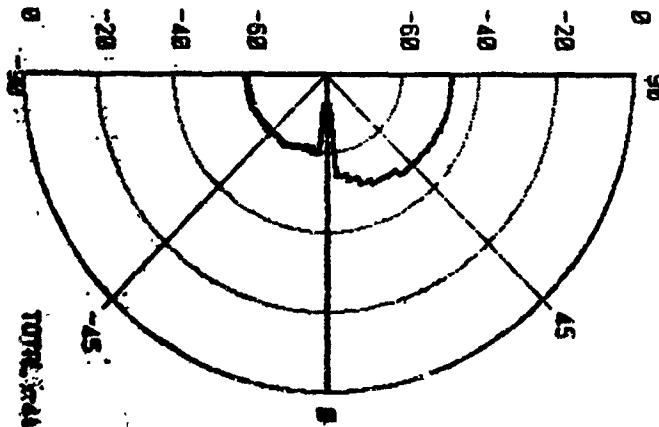
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)



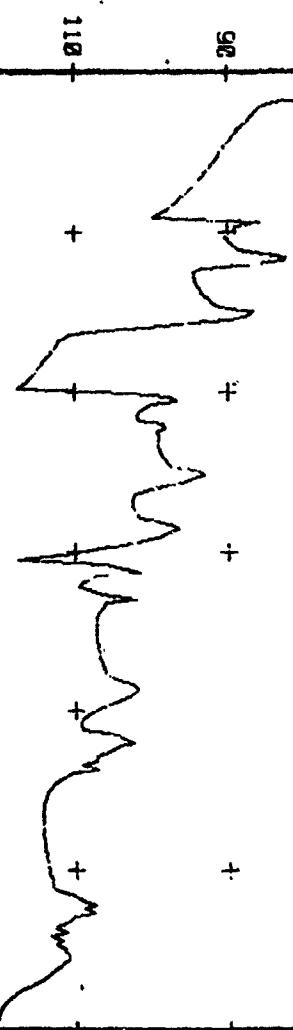
REER 4A SISTER

S 223 N 135 E 12M

145 KTS 15M

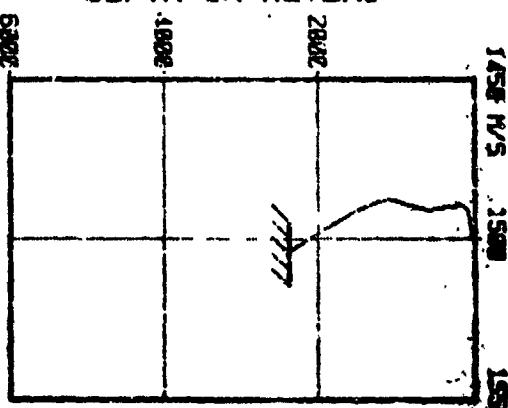
15M

DB LOSS

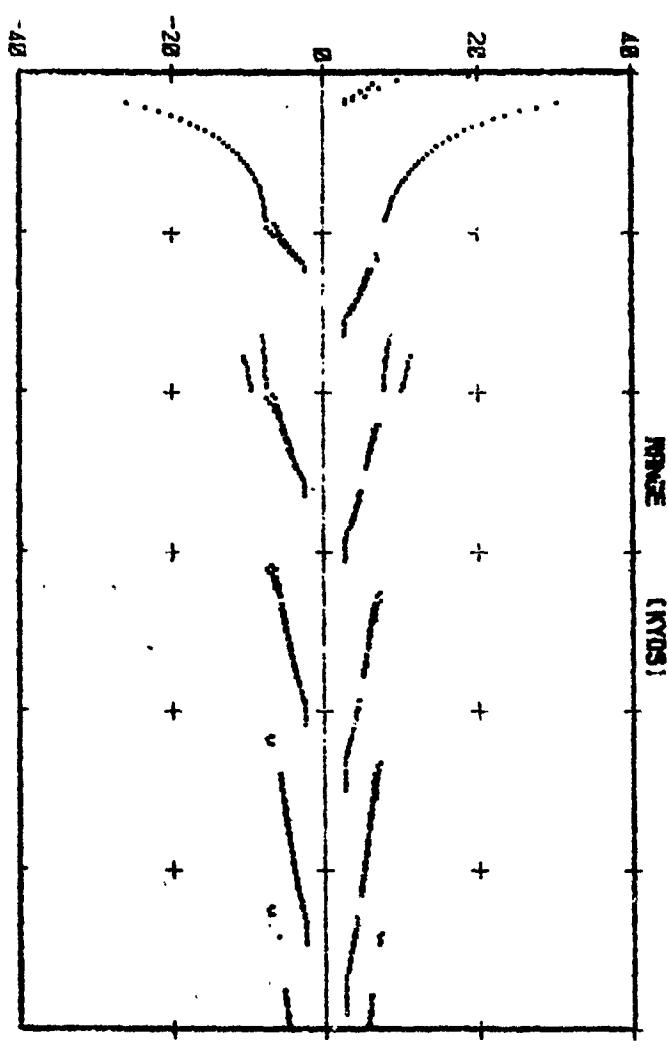


LRAAPP

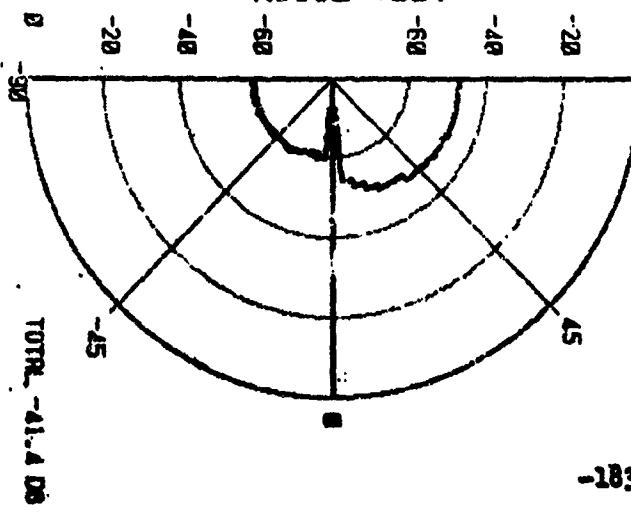
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)



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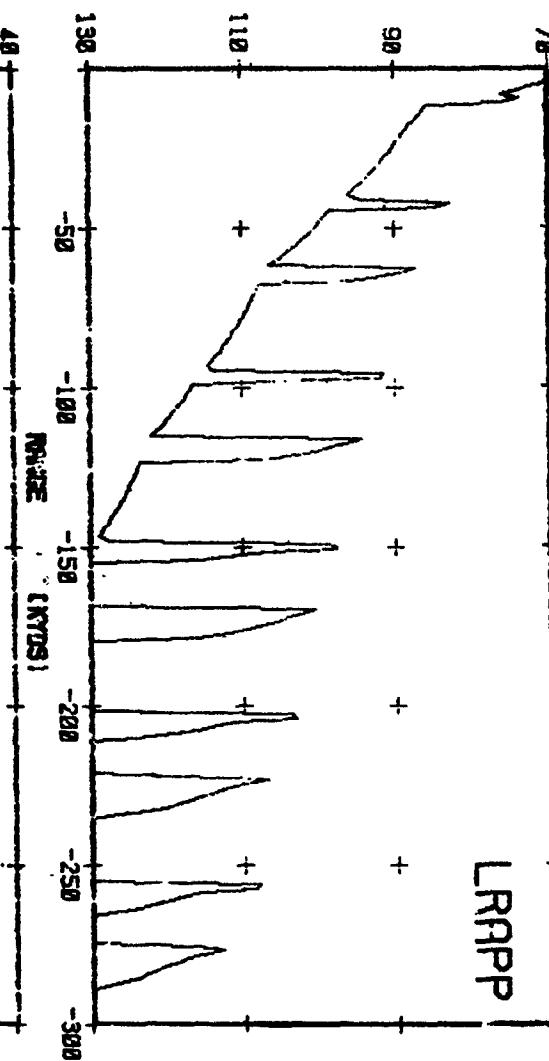
AREA AIR SUMMER

S 20 N 37W F 12m

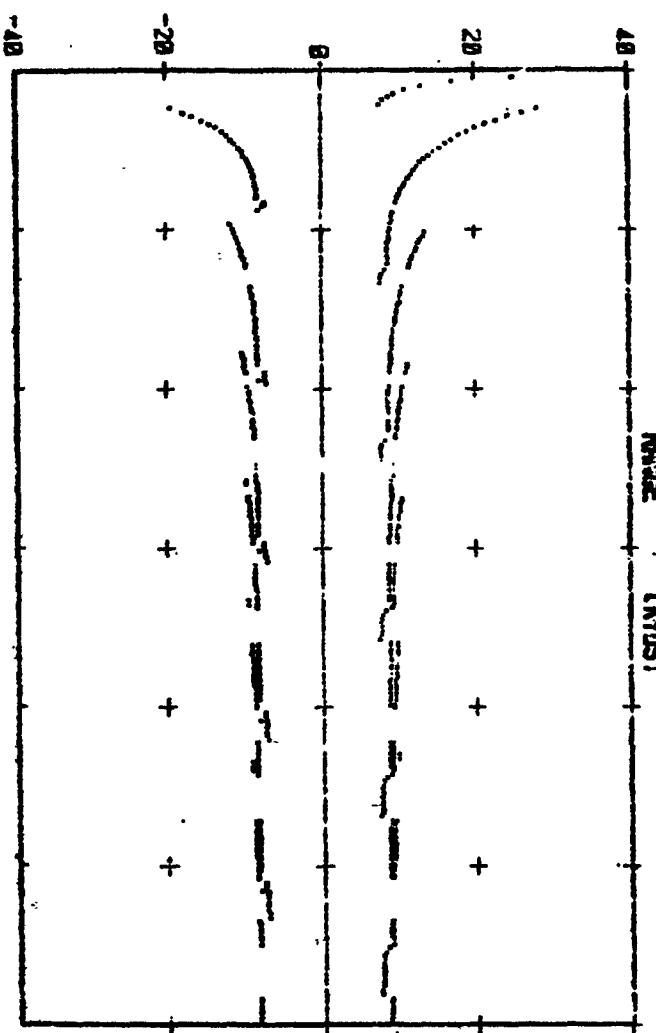
1450 Hz 1500 1550

LRAPP

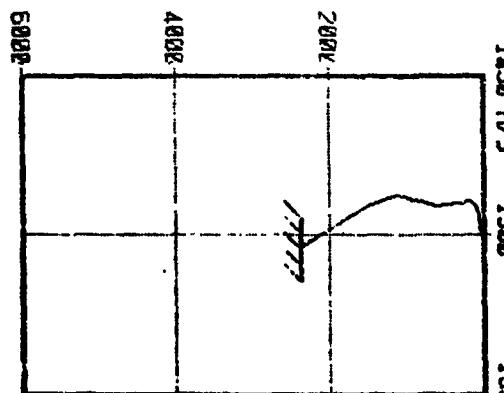
D3 LOSS



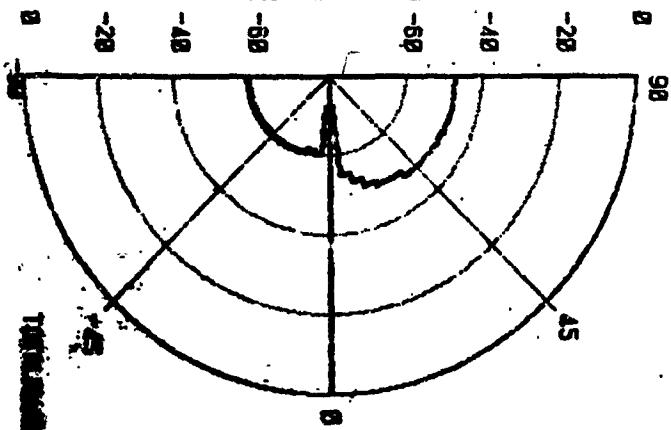
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



78

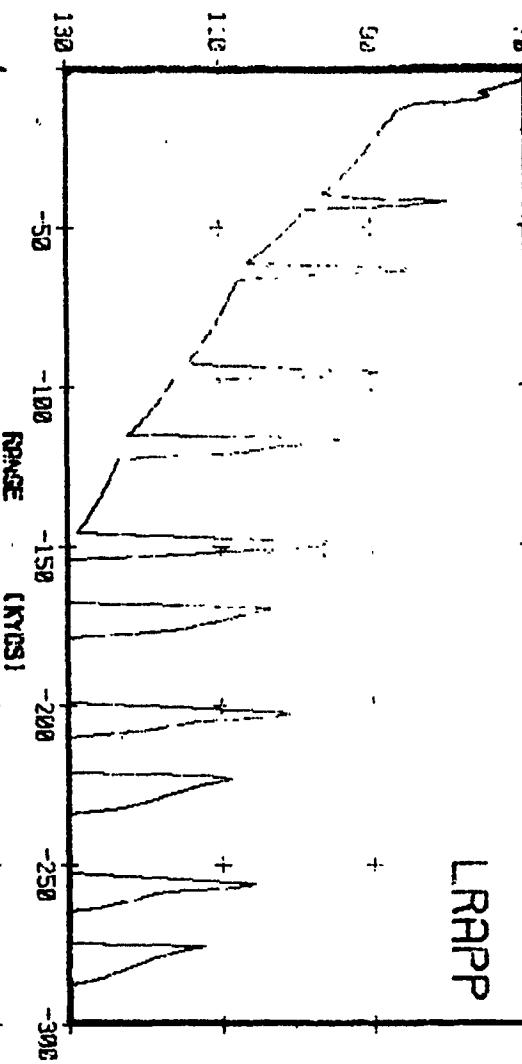
AREA AT SURFACE:

S 53 R 37W F 1288

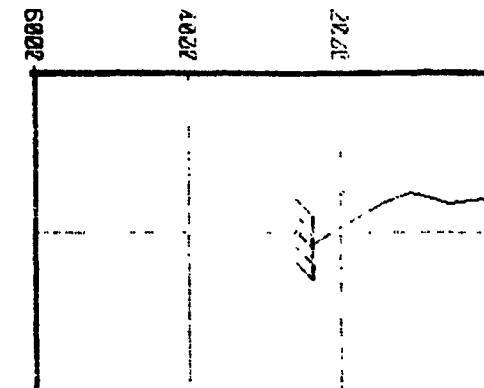
1450 Hz 1500 1550

LRAPP

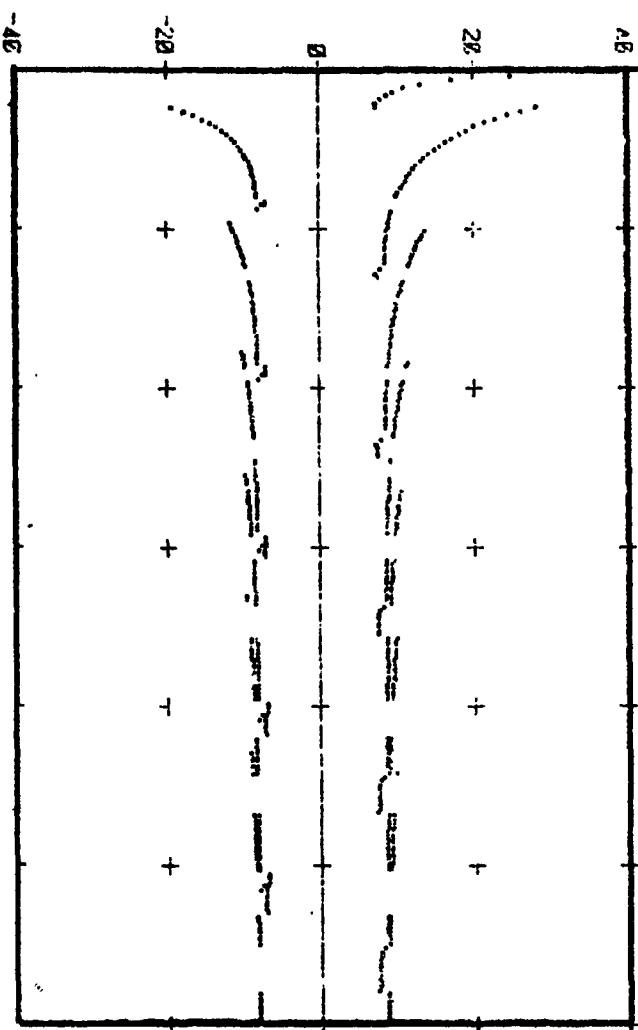
DB LOSS



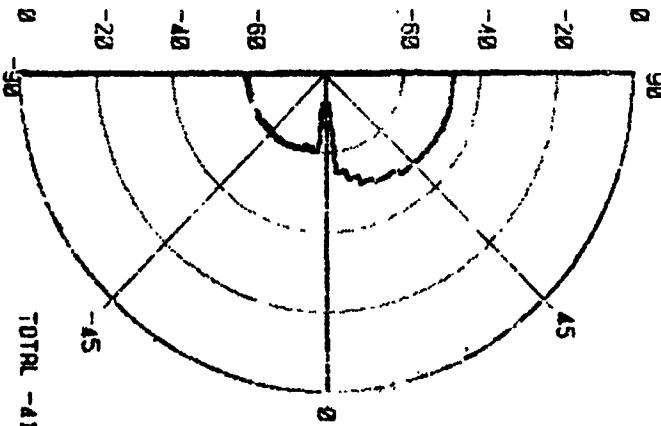
DEPTH TA 20 EPS



ARRIVAL ANGLE



NOISE (DB)



TOTAL -41.5 DB.

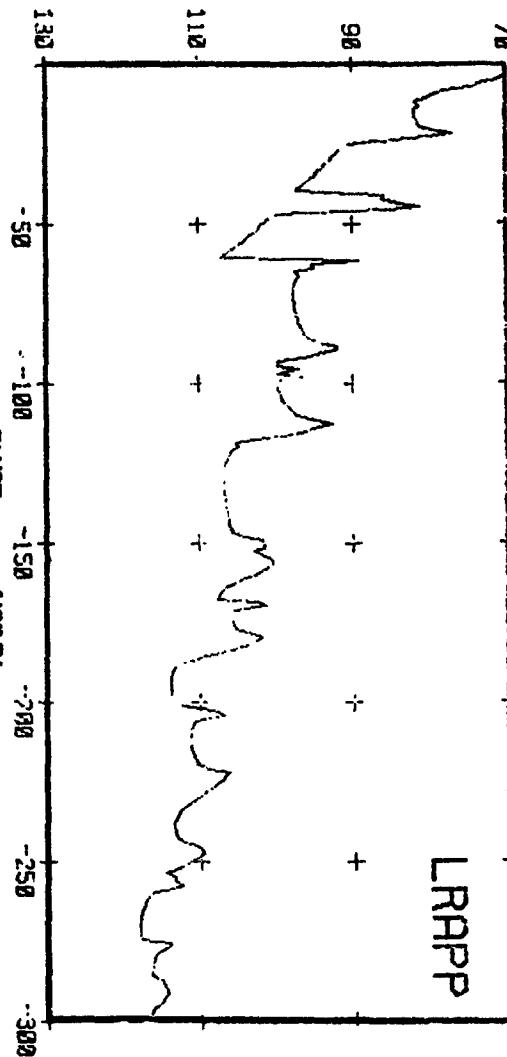
70

AREA 4R SUMMER

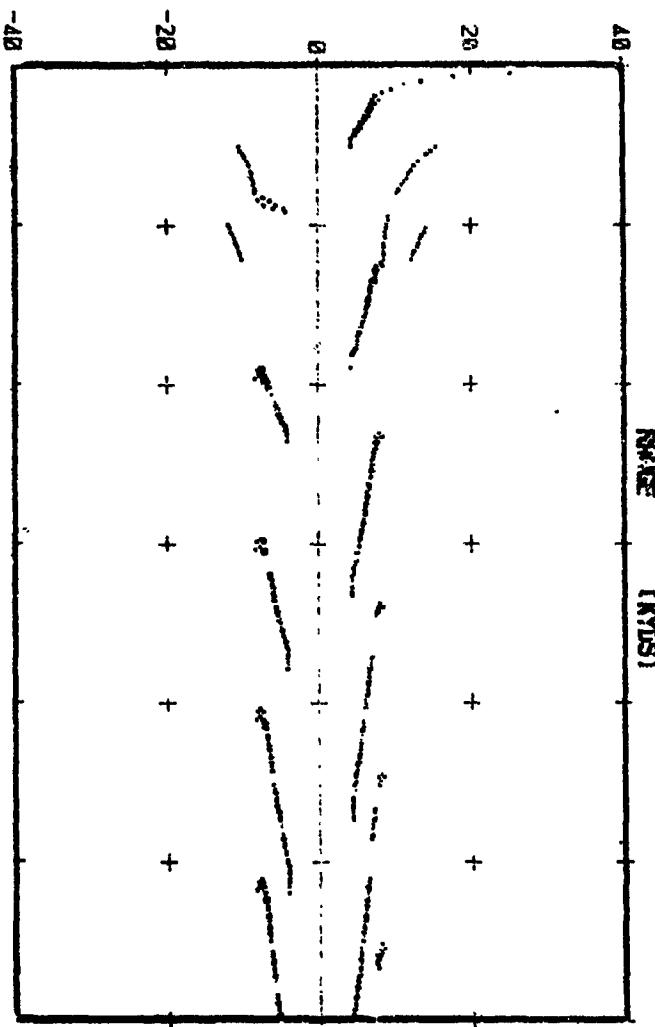
S 233 R 3707 F 1235

1450 Hz 1500 1550

DB LOSS

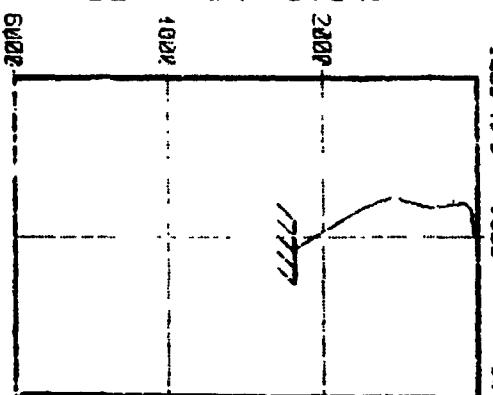


ARRIVAL ANGLE

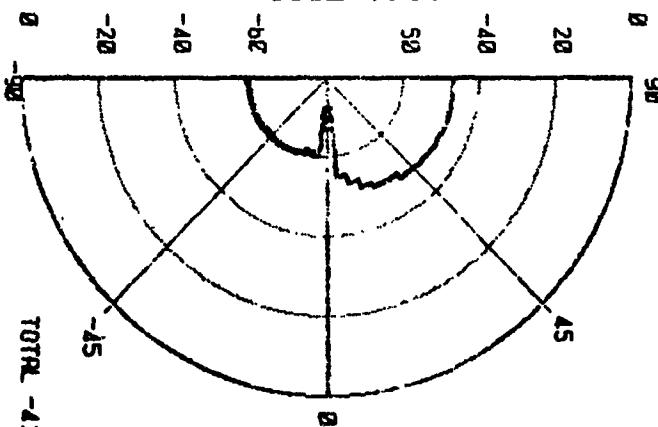


LRAPP

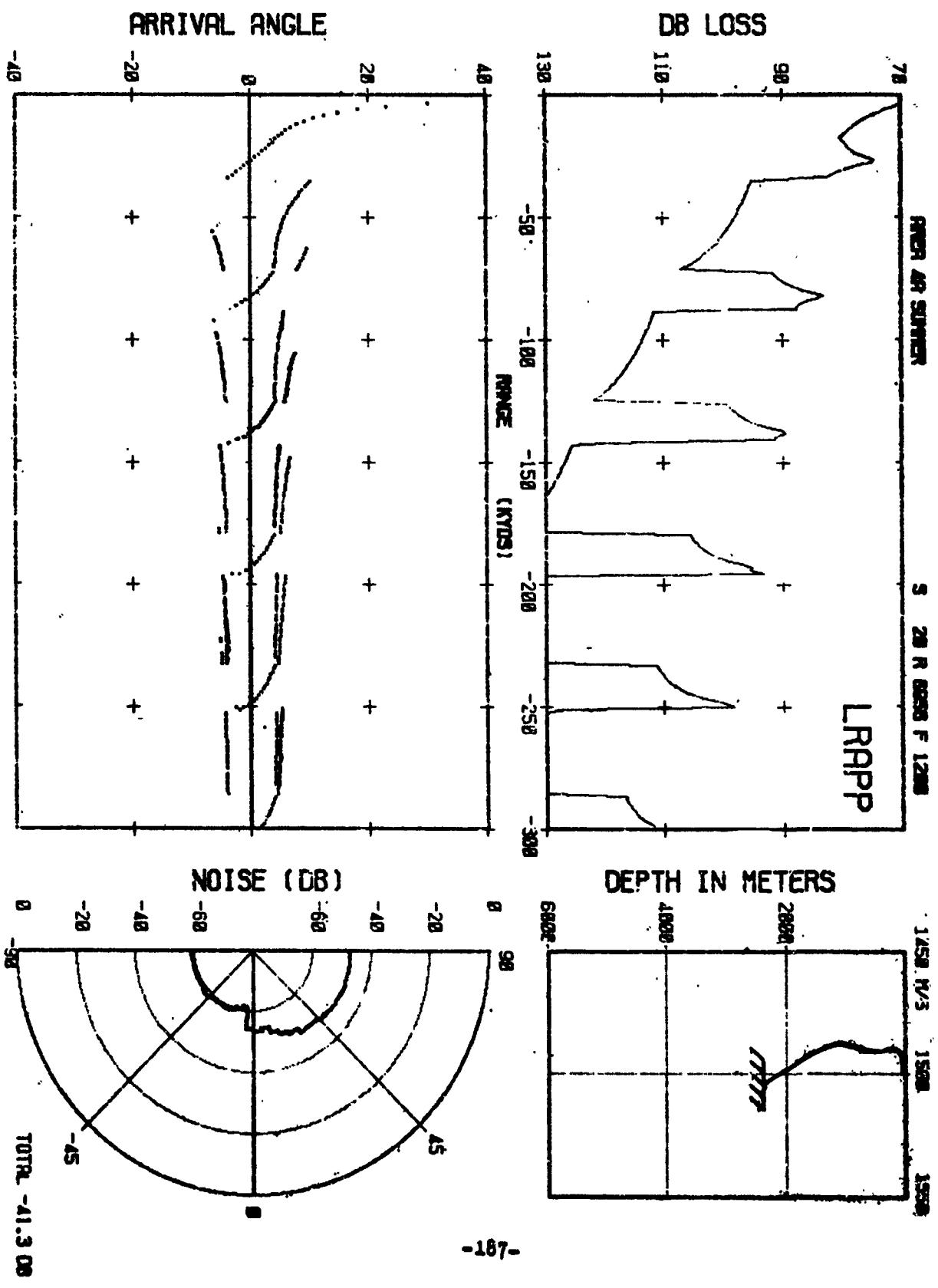
DEPTH IN METERS



NOISE (DB)



TOTAL -41.5 DB

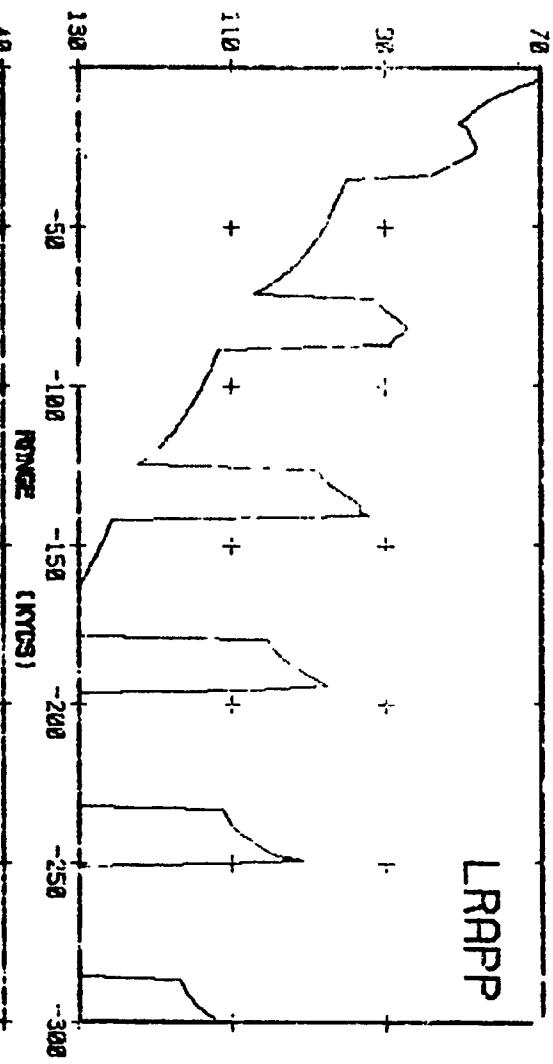


AFTER 4R SUMMER

S 58 R 6958 F 1200

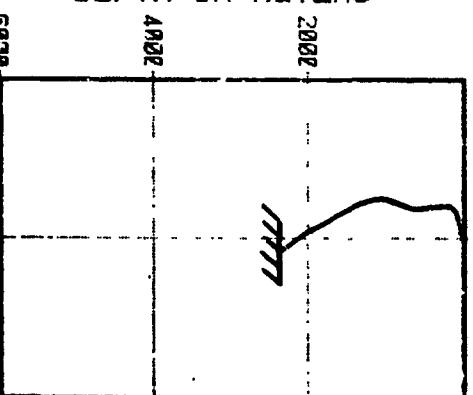
1450 M/S 1500 1550

DB LOSS

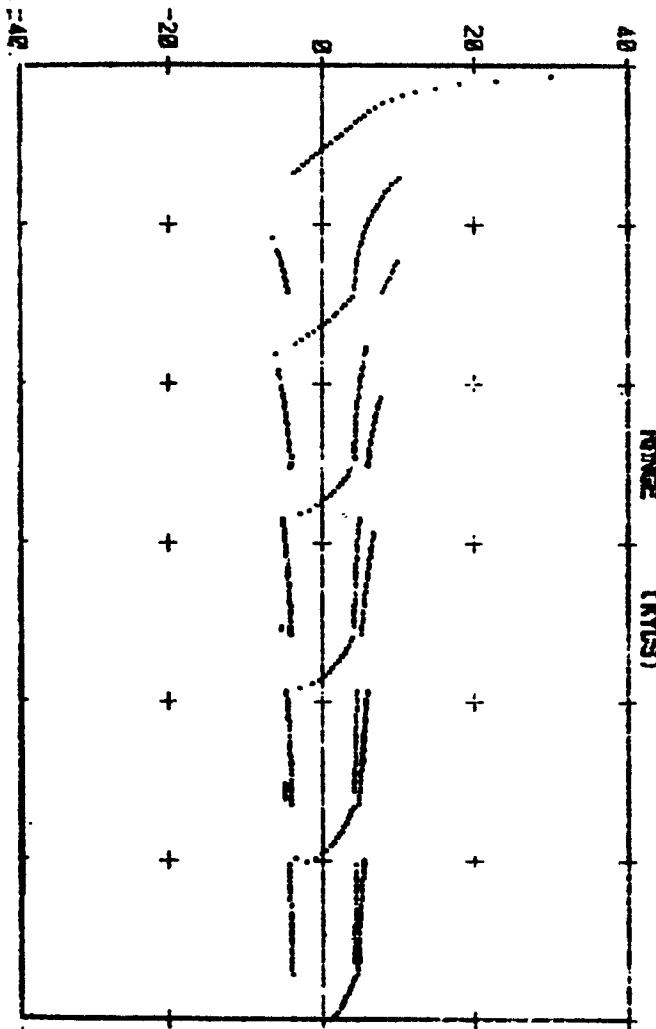


LRAPP

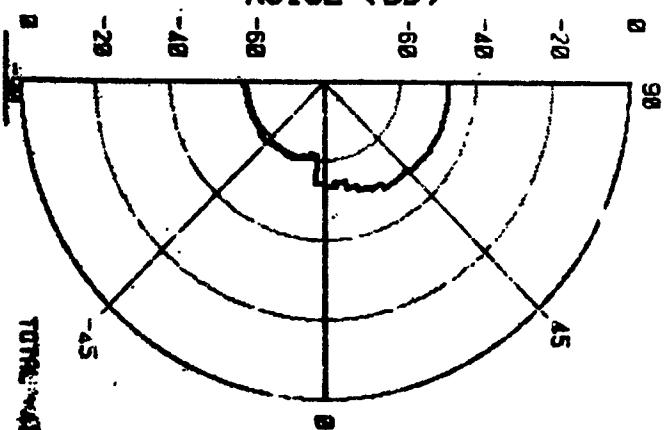
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)



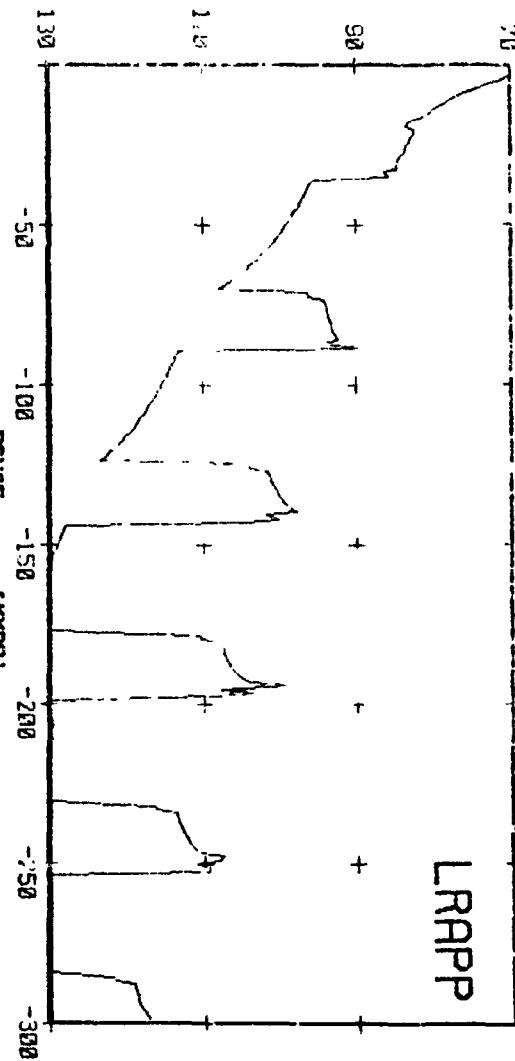
REF 4H SUMMER

S 233 R 6958 F 1260

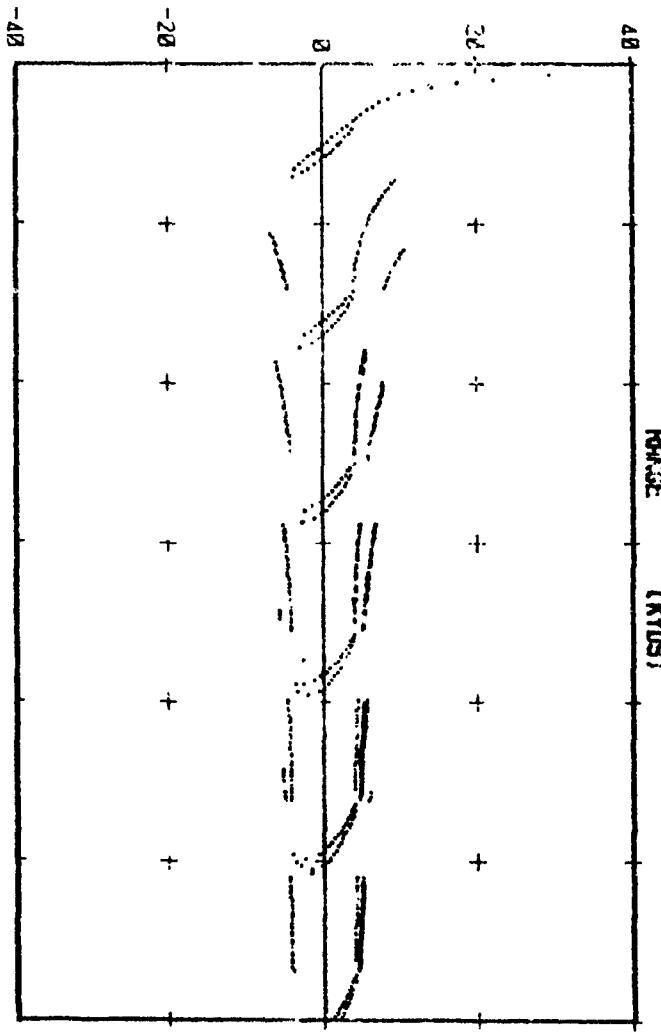
1450 1/3 1520 1550

LRAAPP

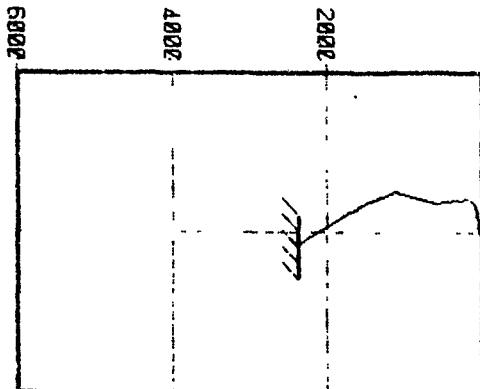
DB LOSS



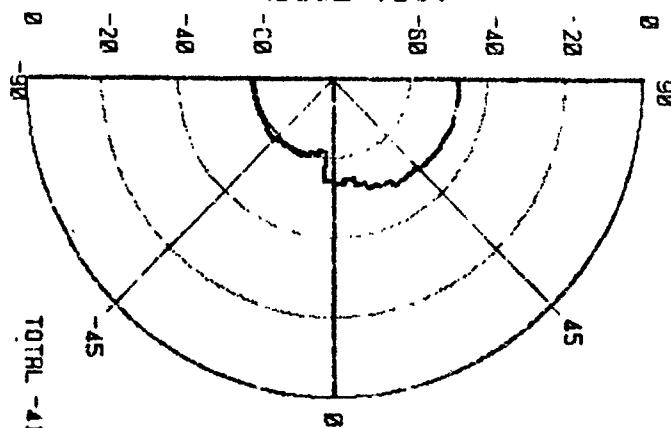
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



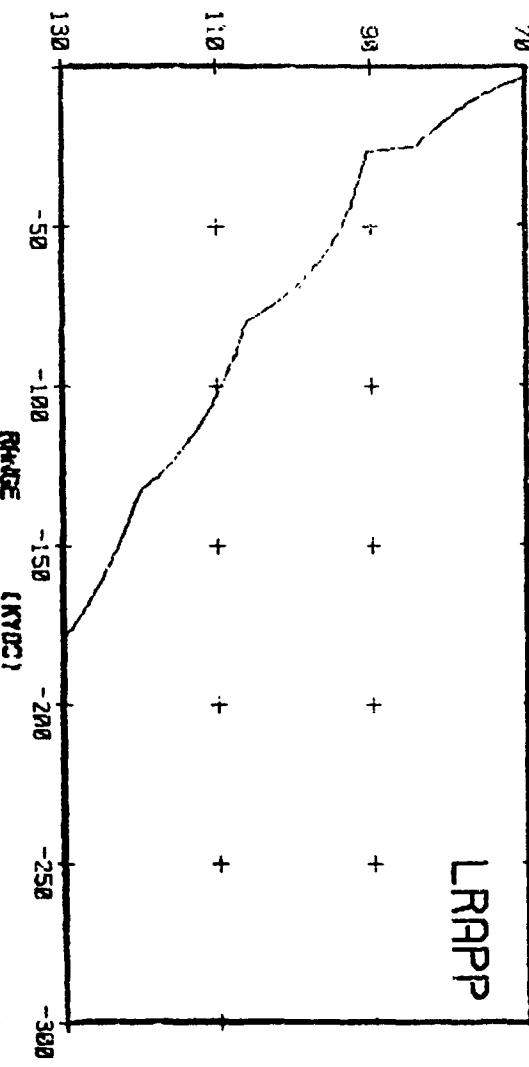
PRED AIR SINKER

S 28 R 7708 F 1208

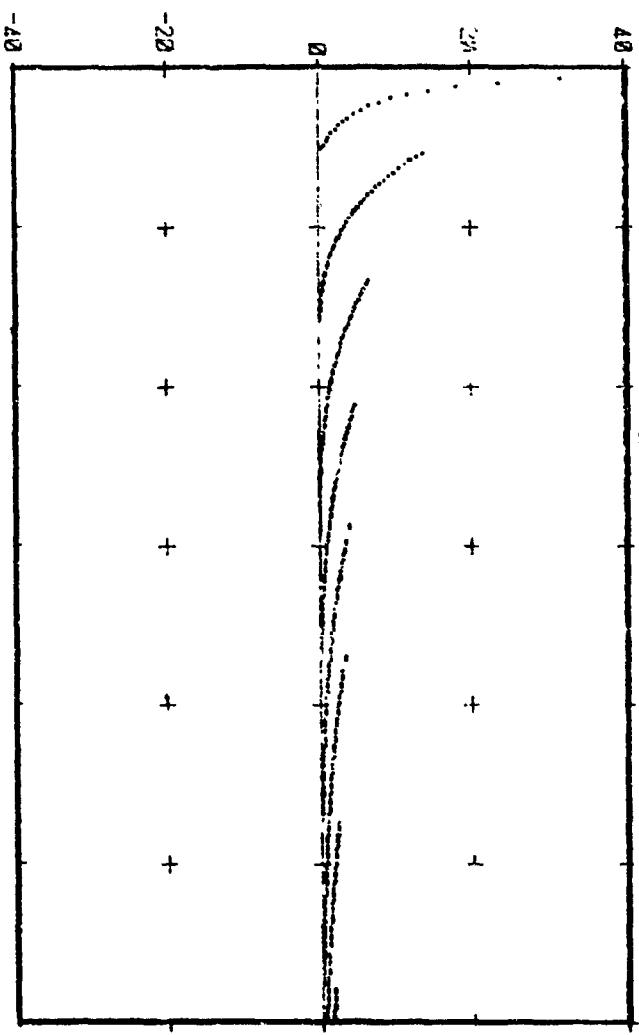
1450 M/S 1500 1550

LRRAPP

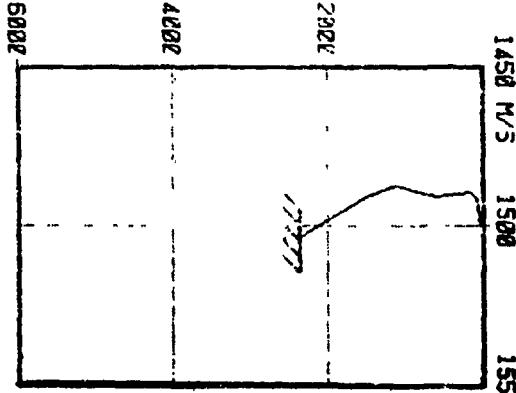
DB LOSS



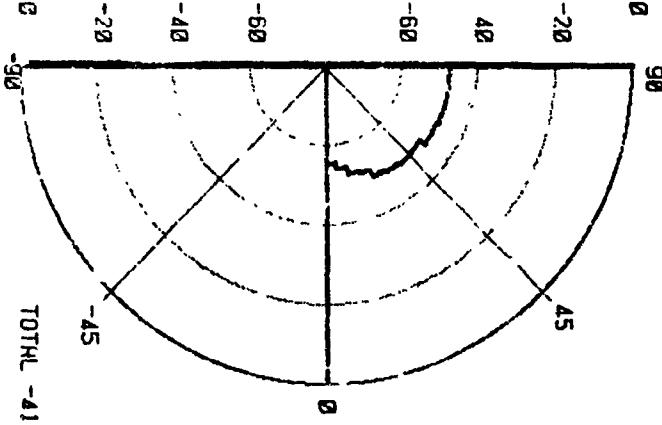
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



76

RHE 4R SUMMER

S 50 R 7798 F 1200

1450 M/S 1500 1550

LRHAPP

DB LOSS

130
120
110
100
90
80
70
60
50
40
30
20
10
0

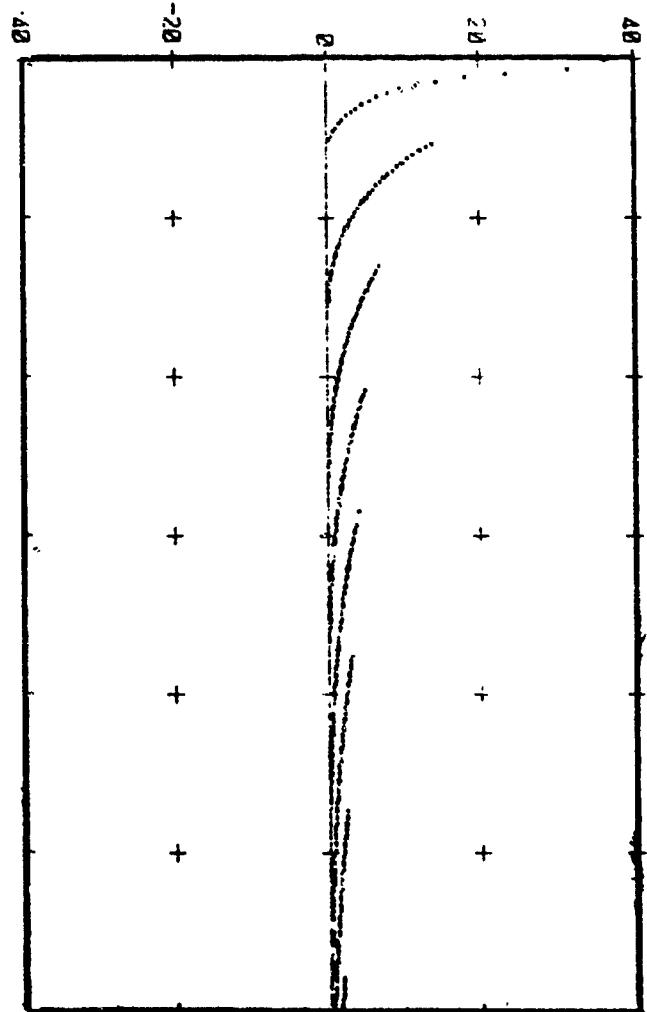
RANGE (KMS)

0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170
180
190
200
210
220
230
240
250
260
270
280
290
300

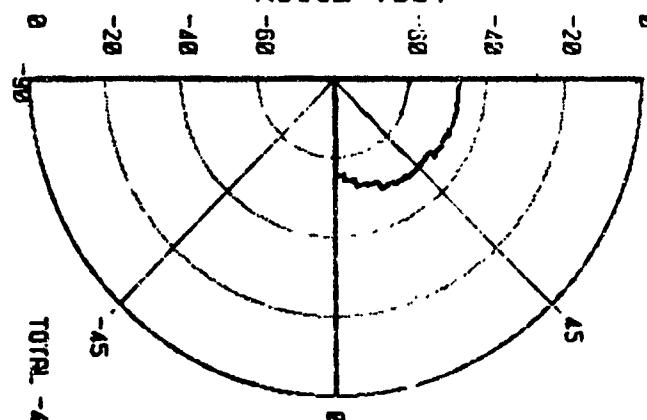
DEPTH IN METERS

2000
1800
1600
1400
1200
1000
800
600
400
200
0

ARRIVAL ANGLE

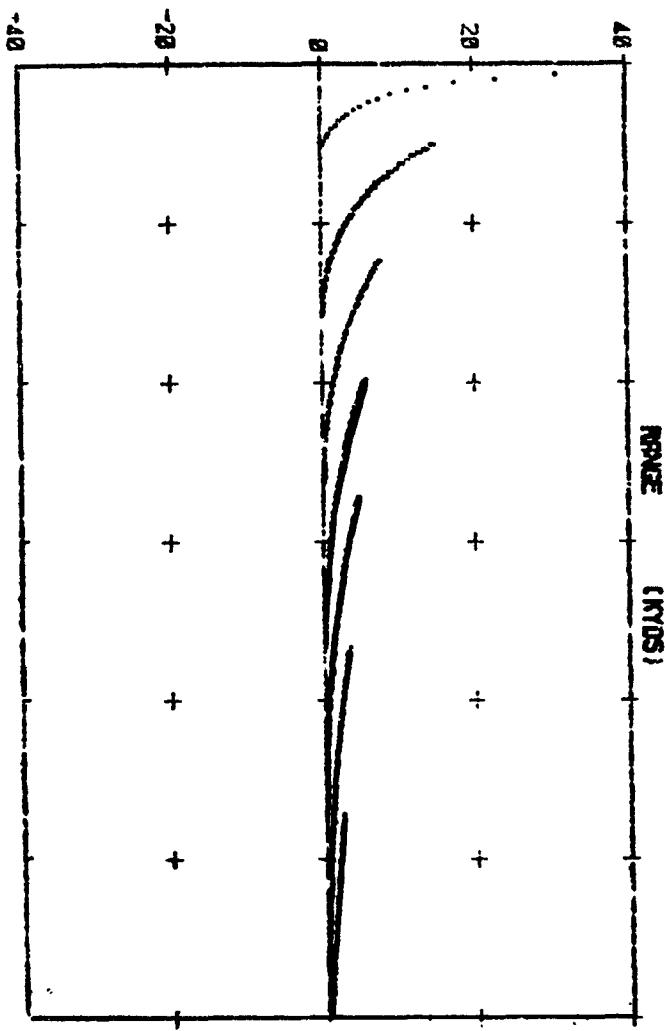


NOISE (DB)

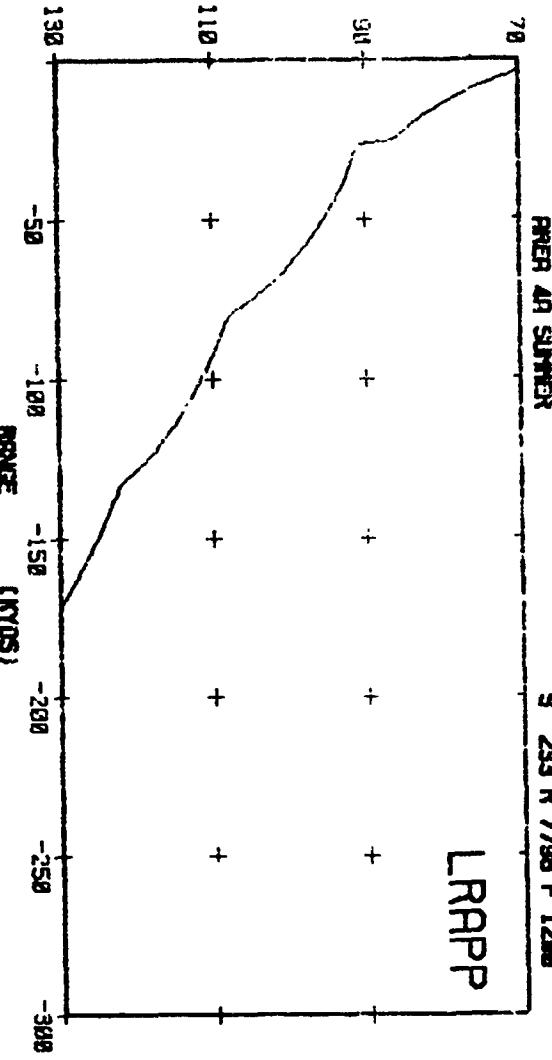


TOTAL -41.9 DB

ARRIVAL ANGLE



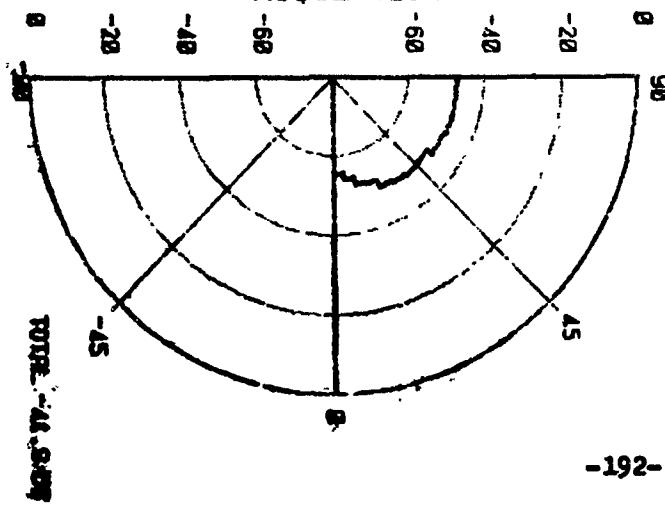
DB LOSS



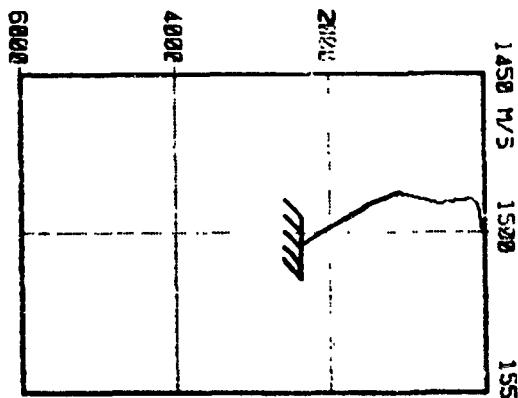
PAPER 49 SUMMER S 233 R 7798 F 1288

LRAFP

NOISE (DB)



DEPTH IN METERS



1450 M/S 1520 1550

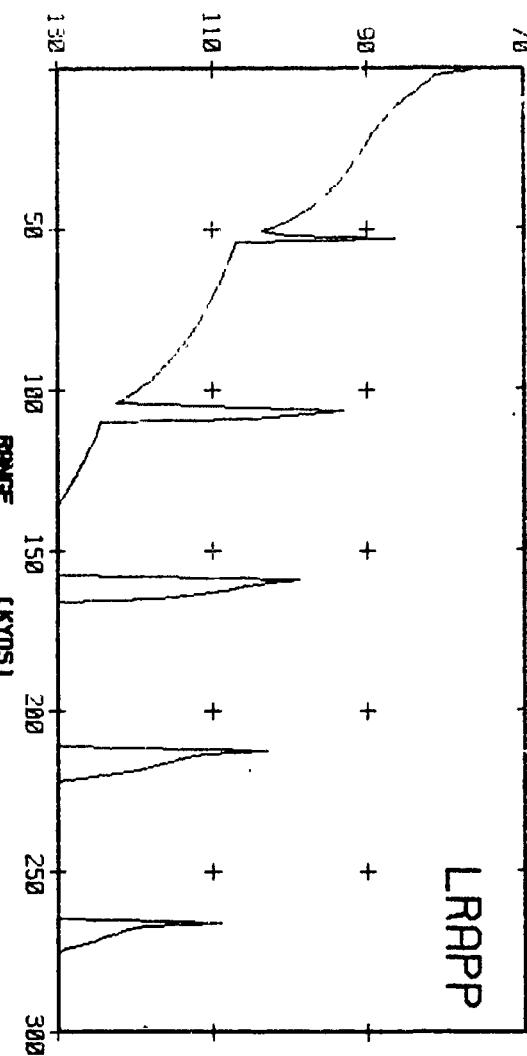
PRIER AIR SUMMER

S 20 R 60 F 2000

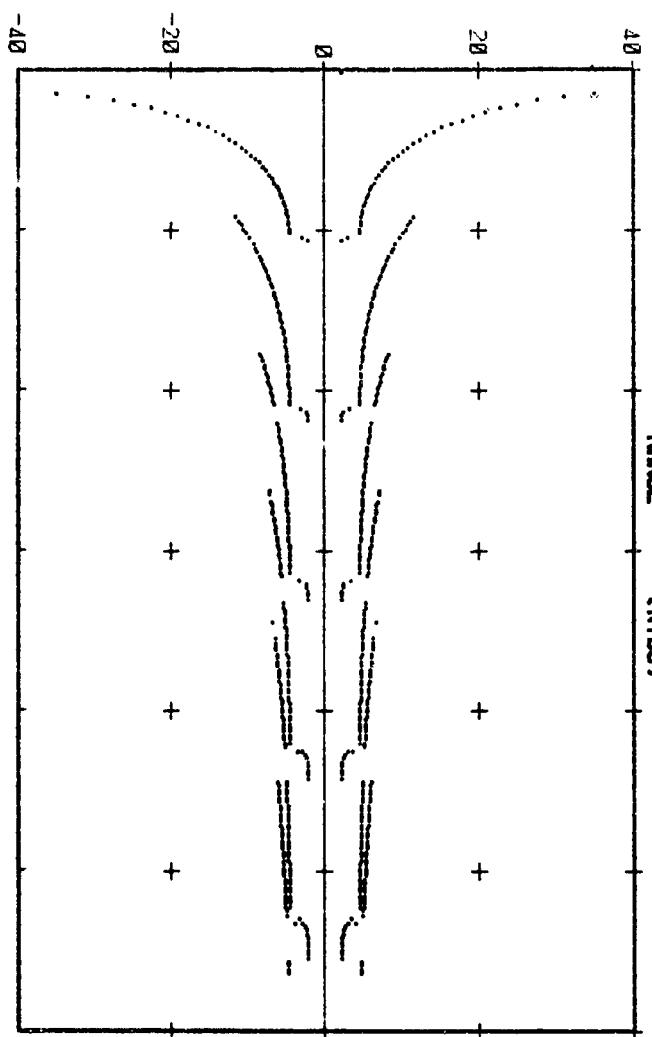
1450 M/S 1500 1550

LRAPP

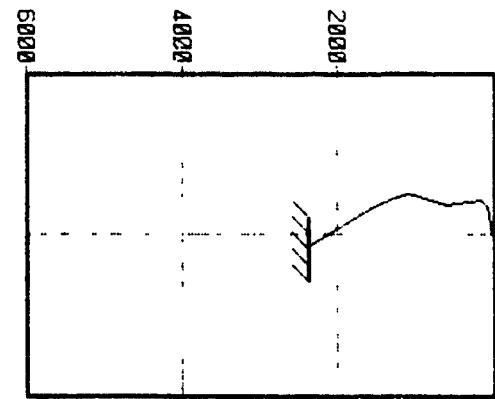
DB LOSS



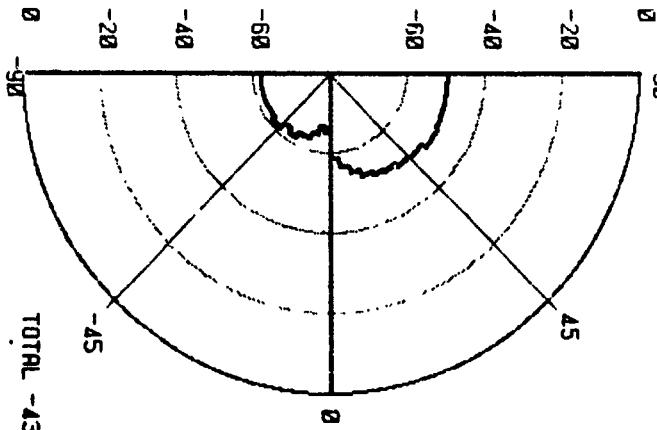
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)

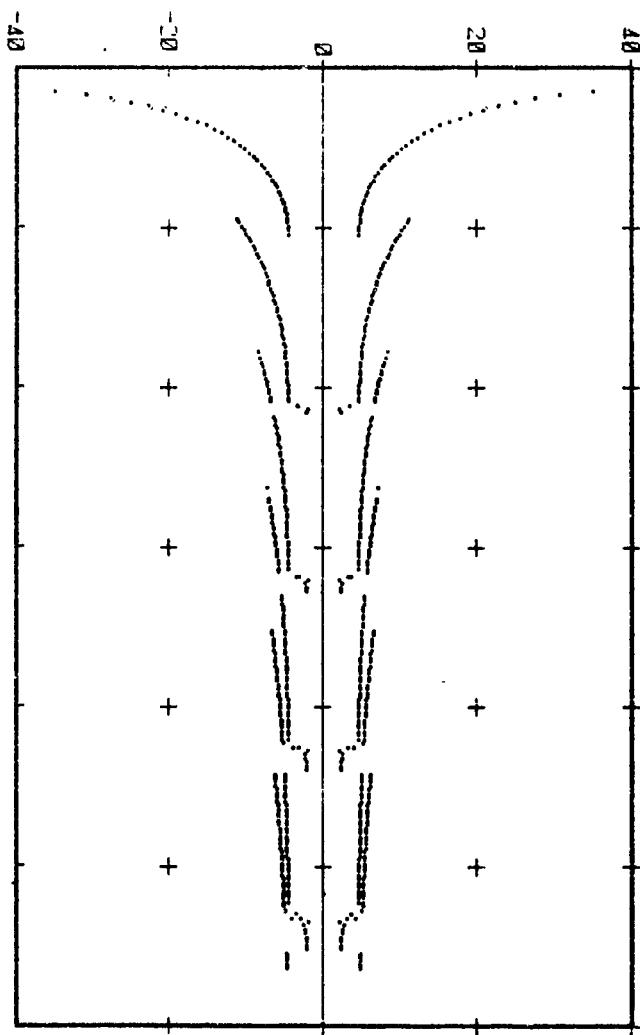


TOTAL -43.6 DB

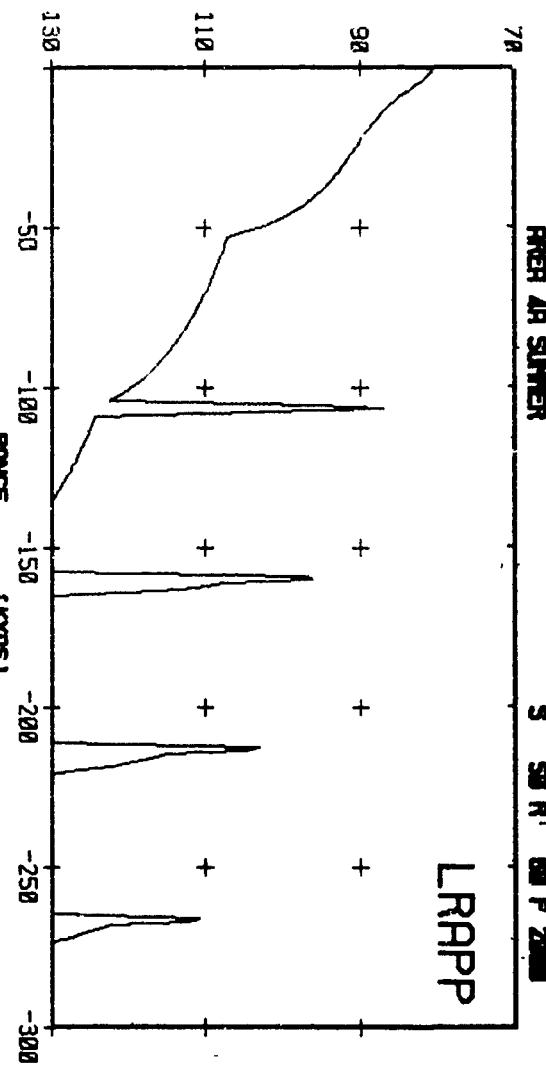
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permit fully legible reproduction

ARRIVAL ANGLE



DB LOSS



LRAPP

FREE AIR SUMMER

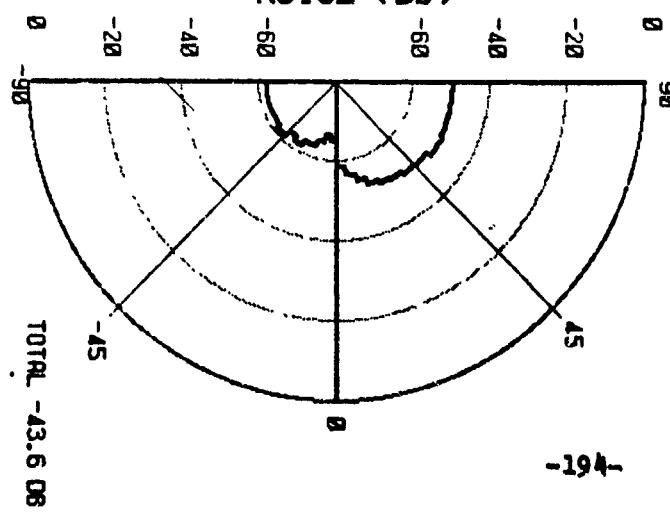
S

SSR

SPZ

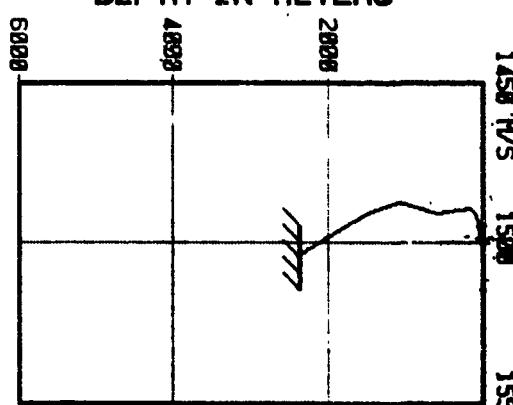
Z

NOISE (DB)



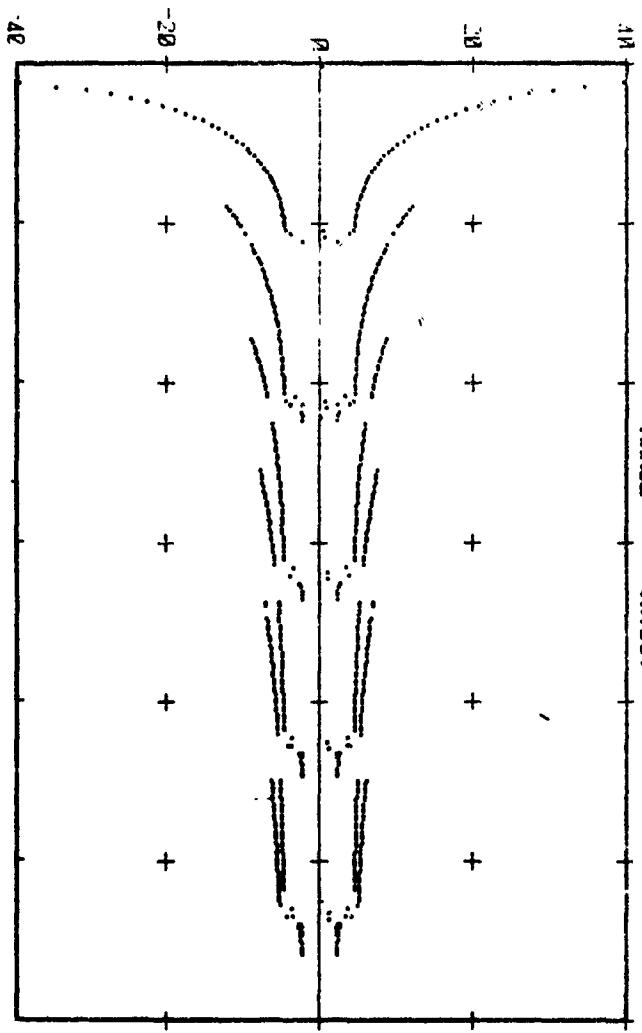
TOTAL -43.6 dB

DEPTH IN METERS

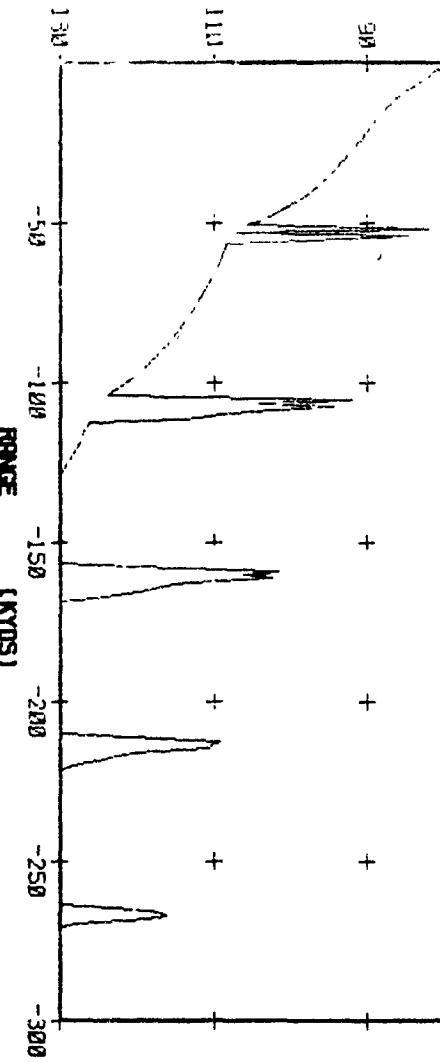


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ARRIVAL ANGLE



DB LOSS

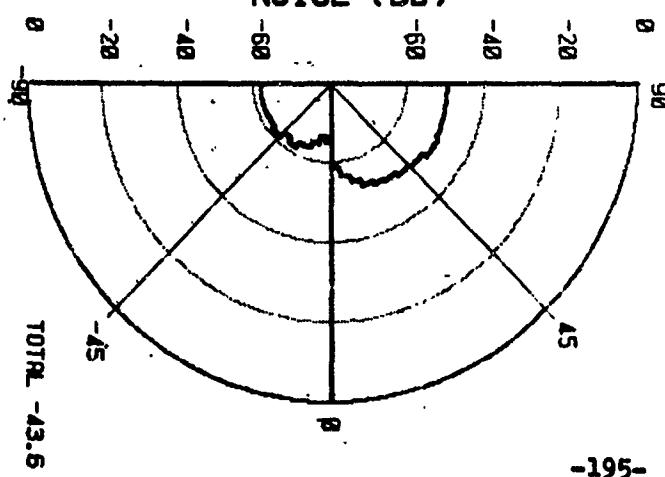
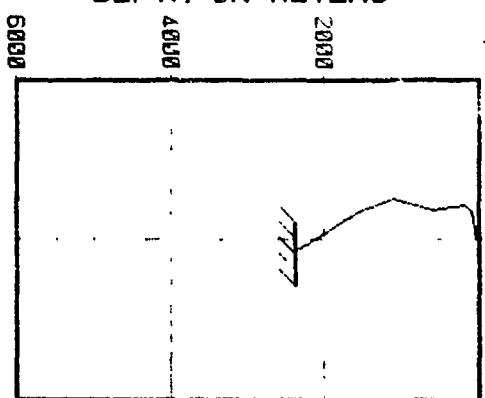


AREA 4R SUMMER
C 253 R 3d F 2000

LRAFP

1450 M/S 1500 1550

DEPTH IN METERS



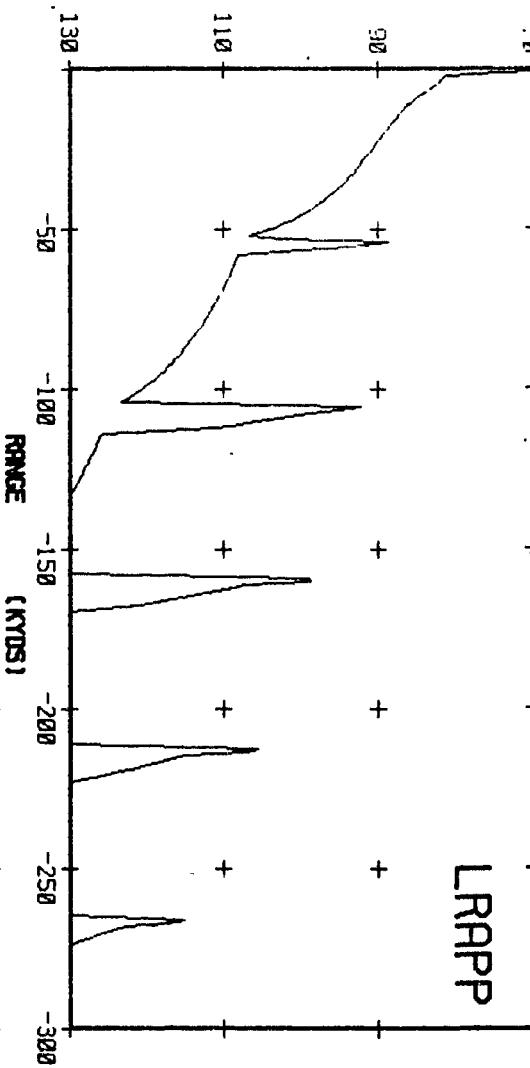
AREA 4R SUMMER

S 28 R 133 F 2200

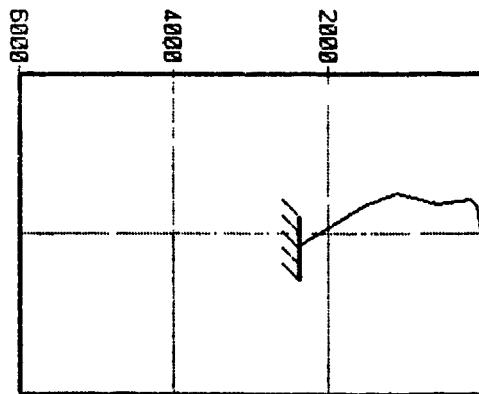
1450 M/S 1500 1550

LRAAPP

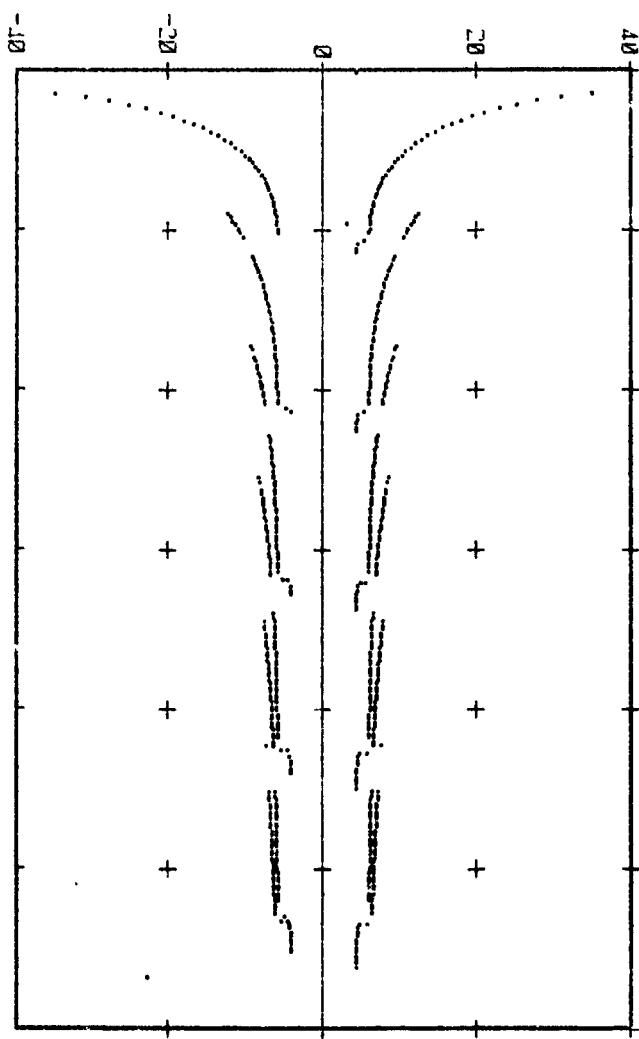
DB LOSS



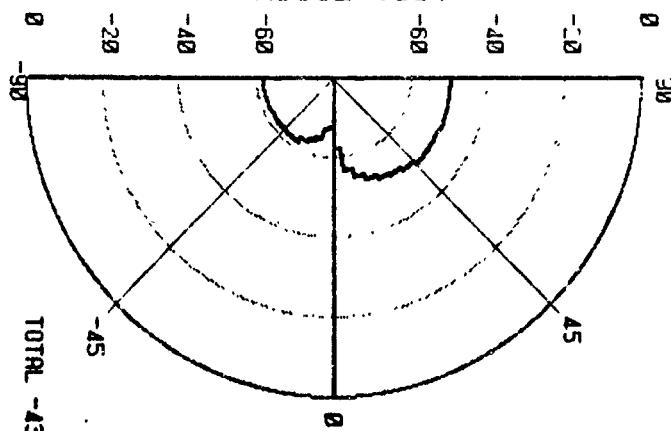
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)



TOTAL -43.7 DB

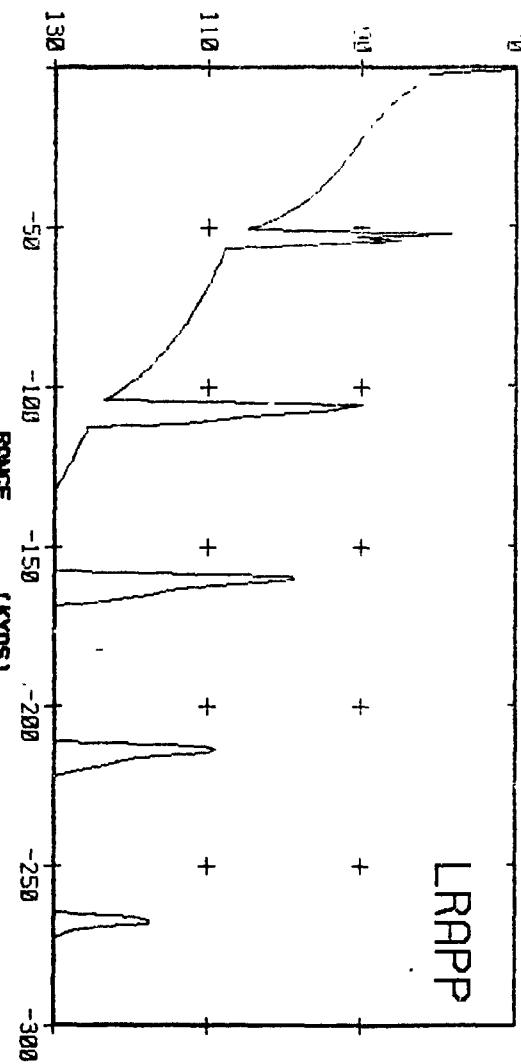
RRER 4R SUMMER

S 50 R 133 F 2000

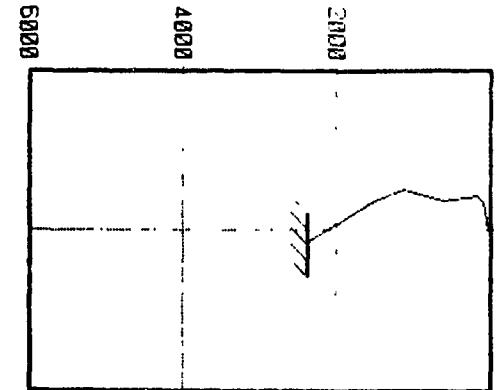
1450 M/S 1500 1550

LRAPP

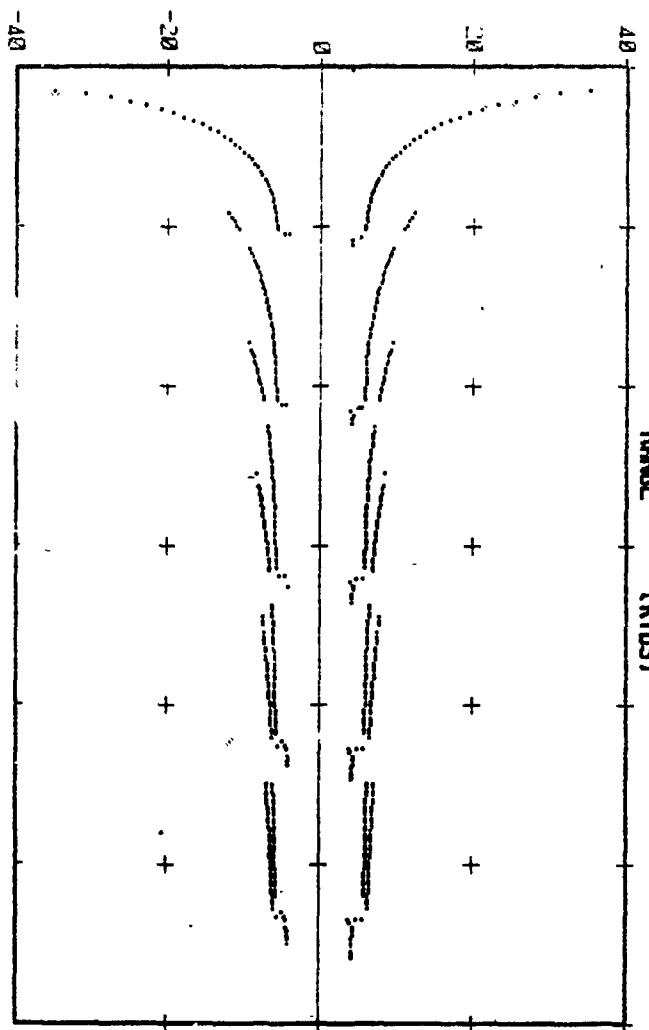
DB LOSS



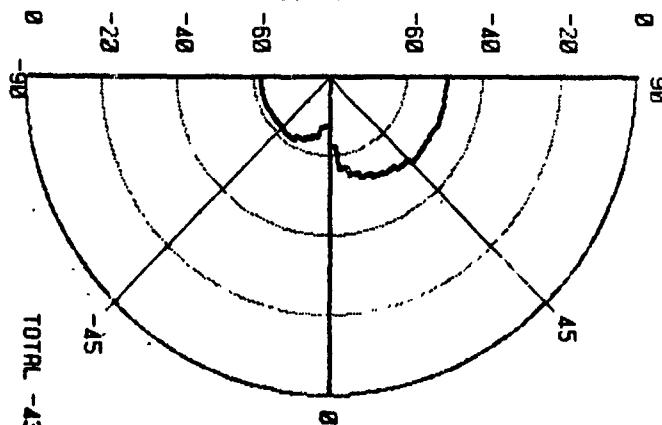
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)



70

ARRER 4R SUMMER

S 233 R 133 F 2000

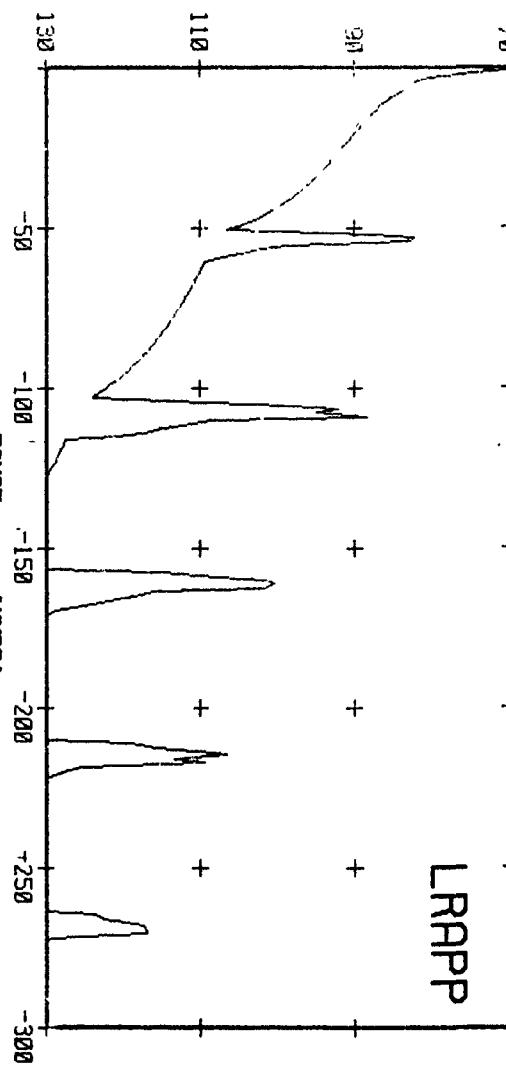
1450 M/S

1500

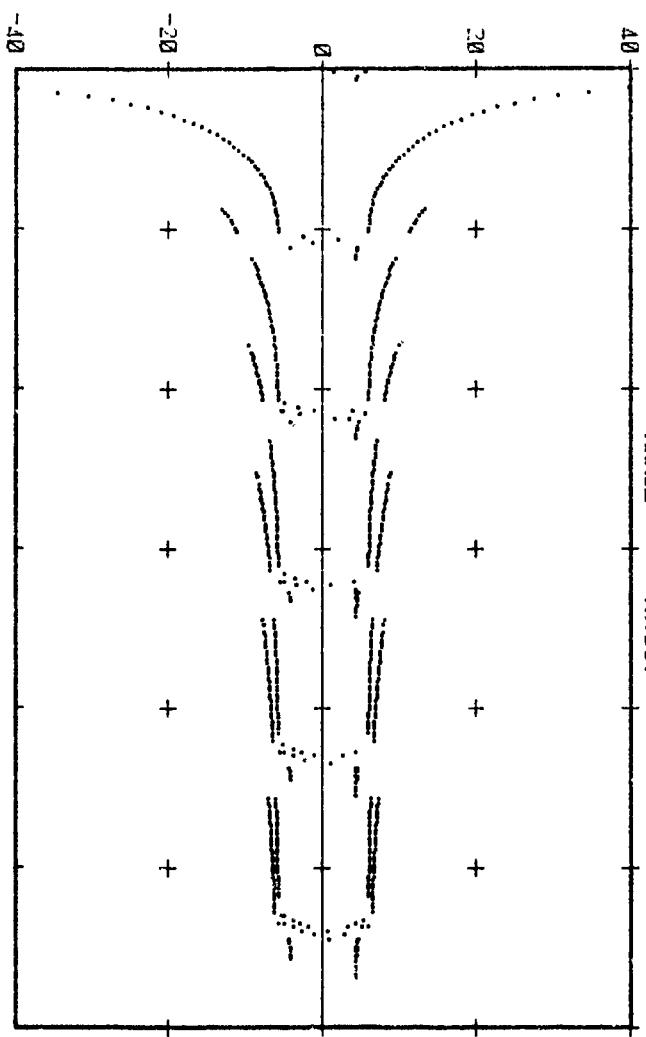
1550

LRAPP

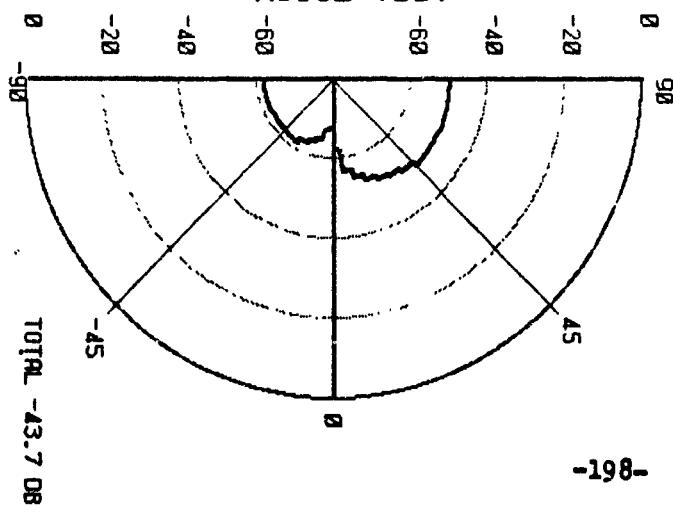
DB LOSS



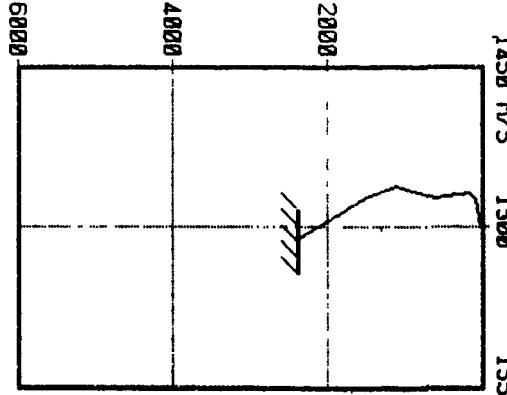
ARRIVAL ANGLE



NOISE (DB)



DEPTH IN METERS



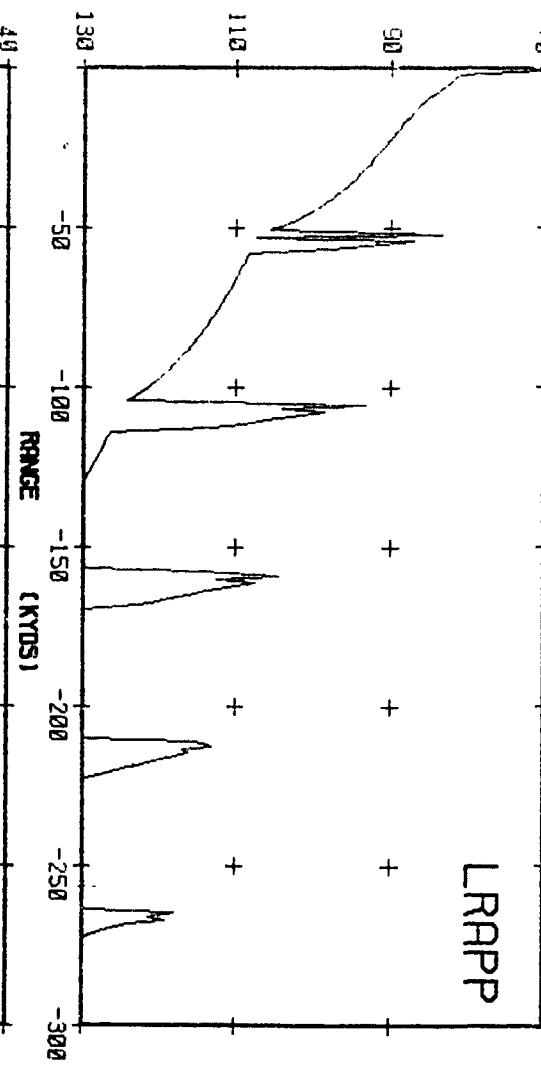
AREA 4R SUMMER

S 20 R 300 F 2000

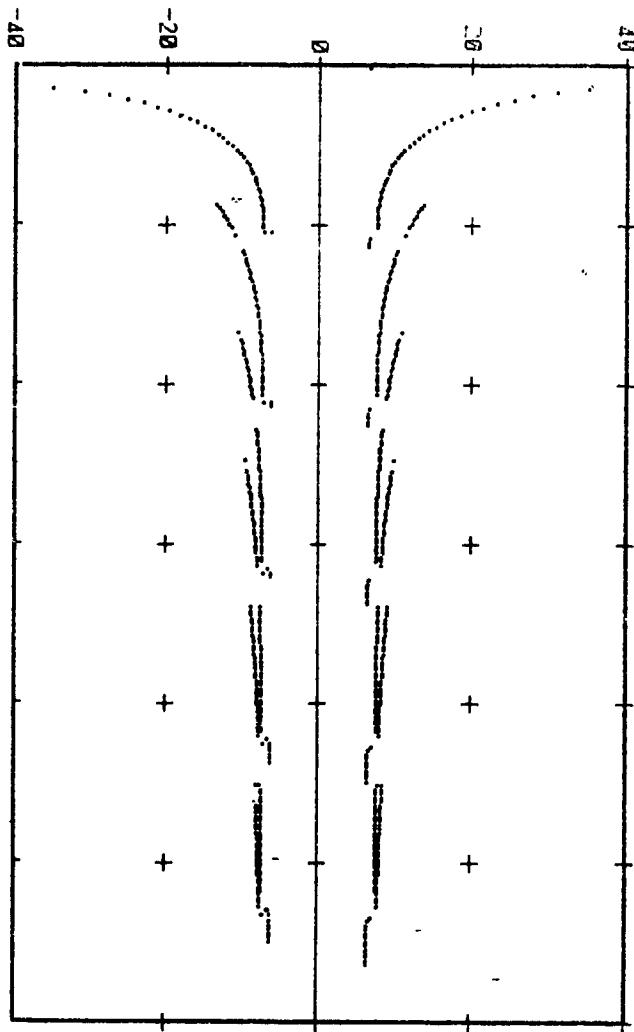
1450 M/S 1500 1550

DB LOSS

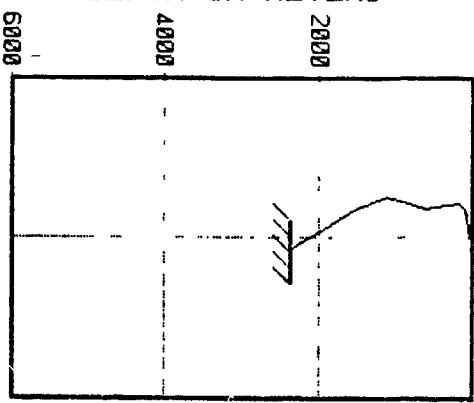
LRAPP



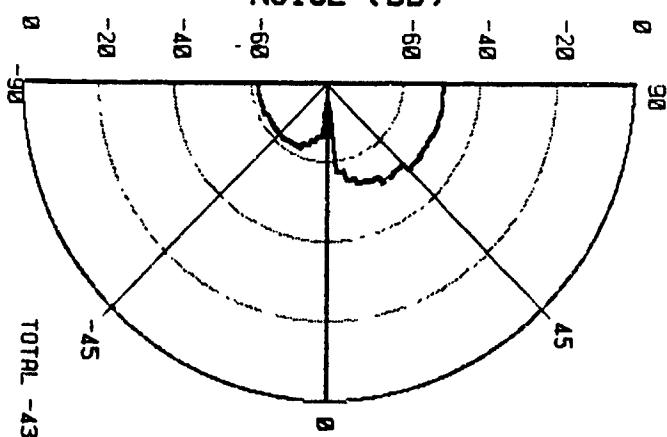
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



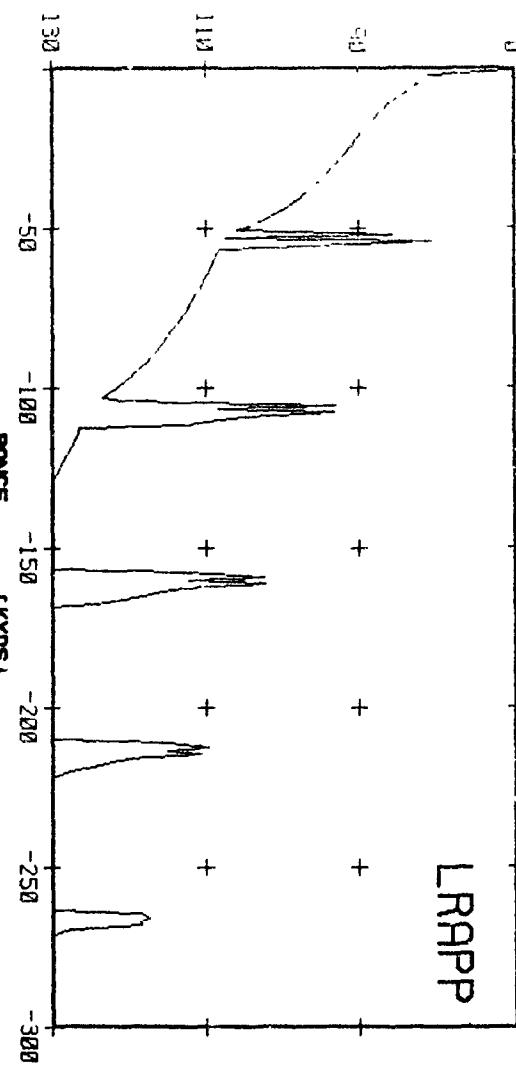
AREA 4R SUMMER

S 50 R 300 F 2000

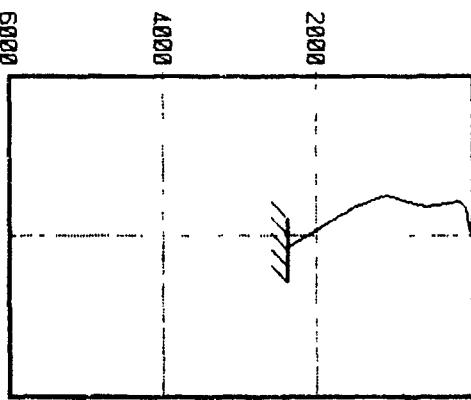
1450 M/S 1500 1550

L RAPP

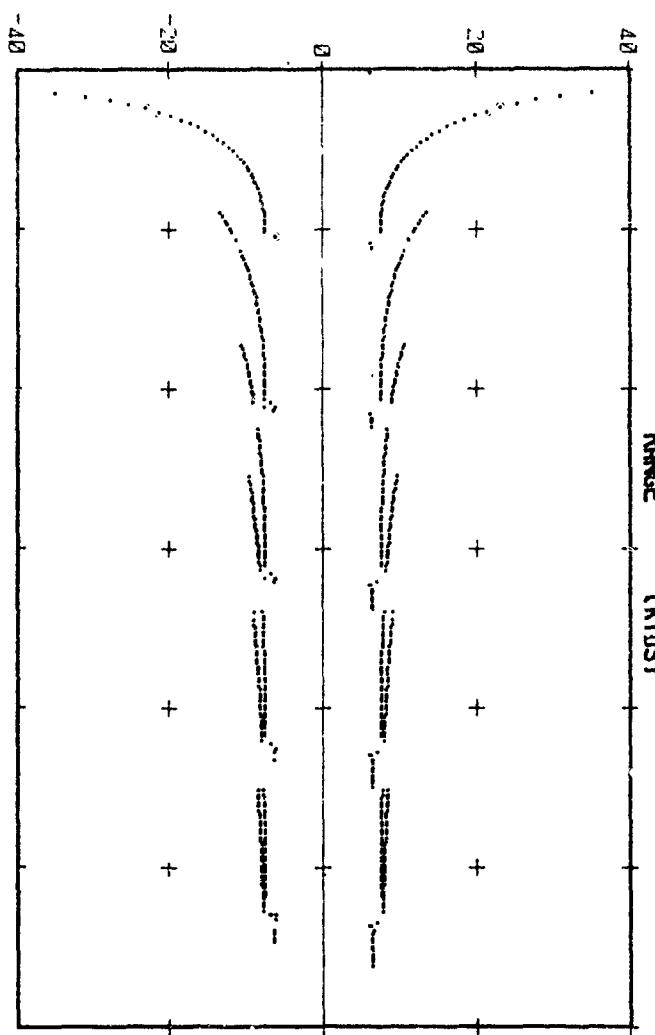
DB LOSS



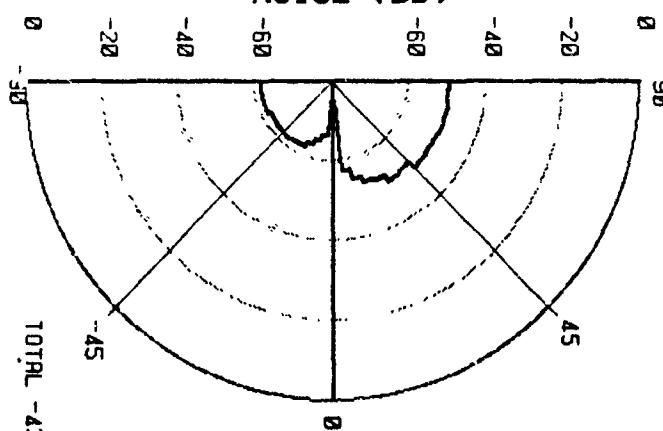
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)



79

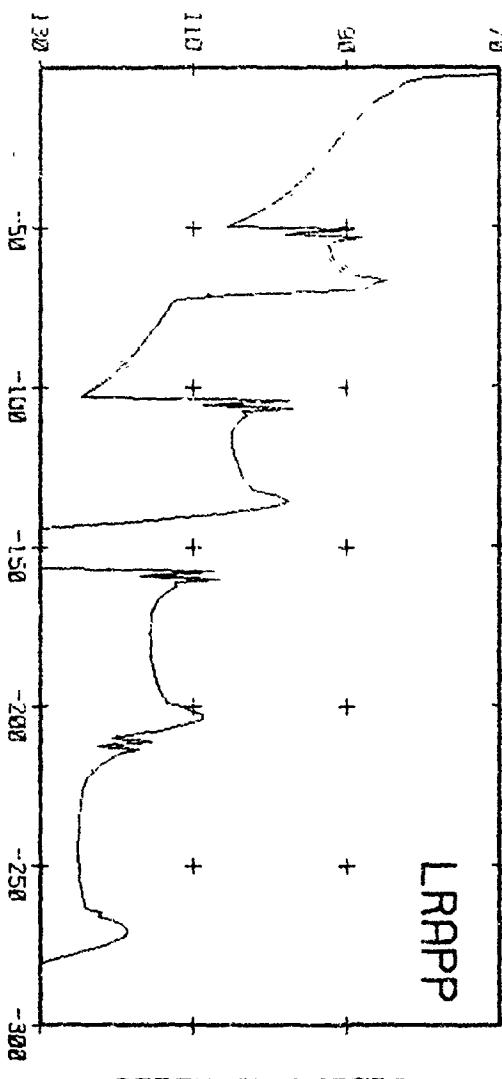
ARRER 4A SUMMER

S 233 R 308 F 2000

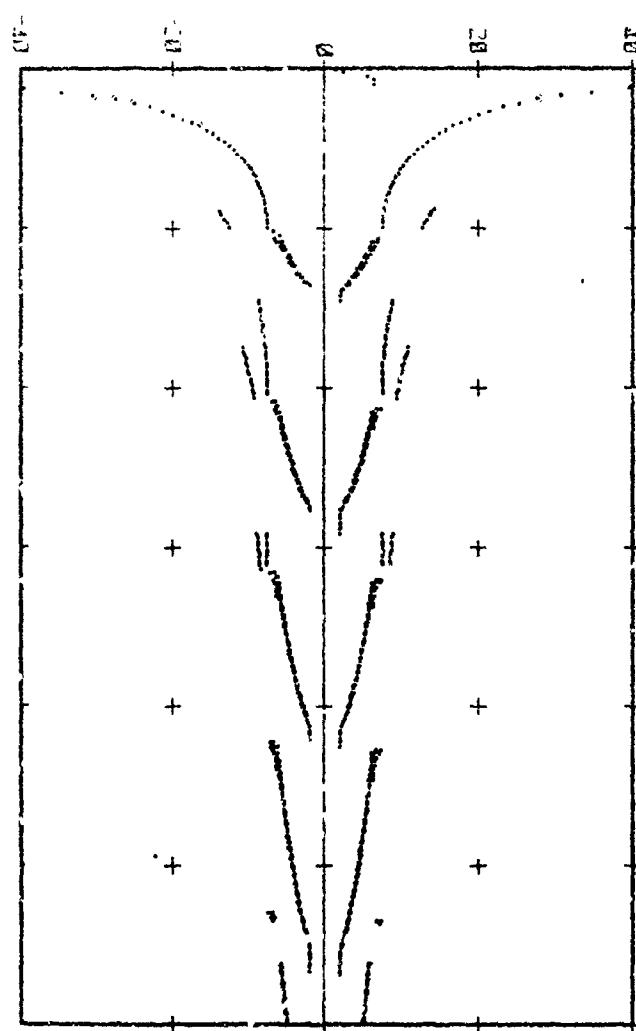
1450 M/S 1500 1550

DB LOSS

LRAPP

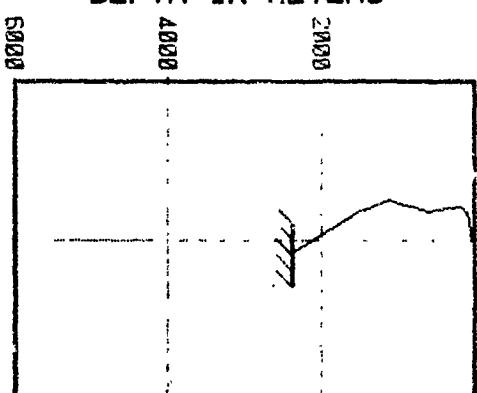
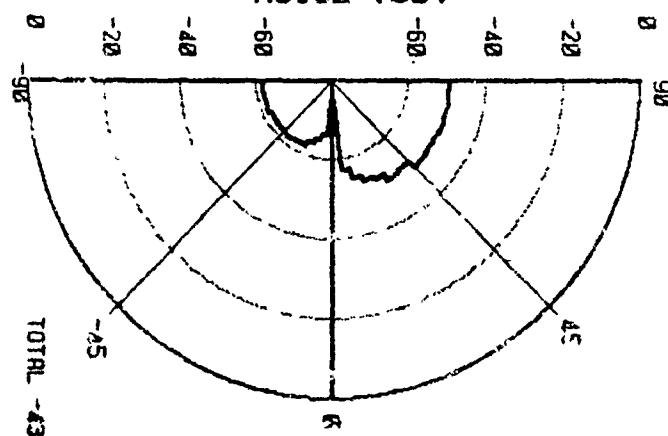


ARRIVAL ANGLE



NOISE (DB)

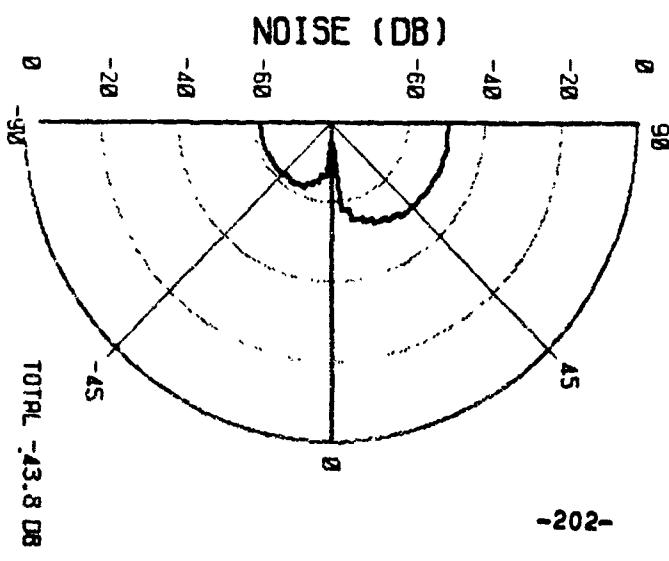
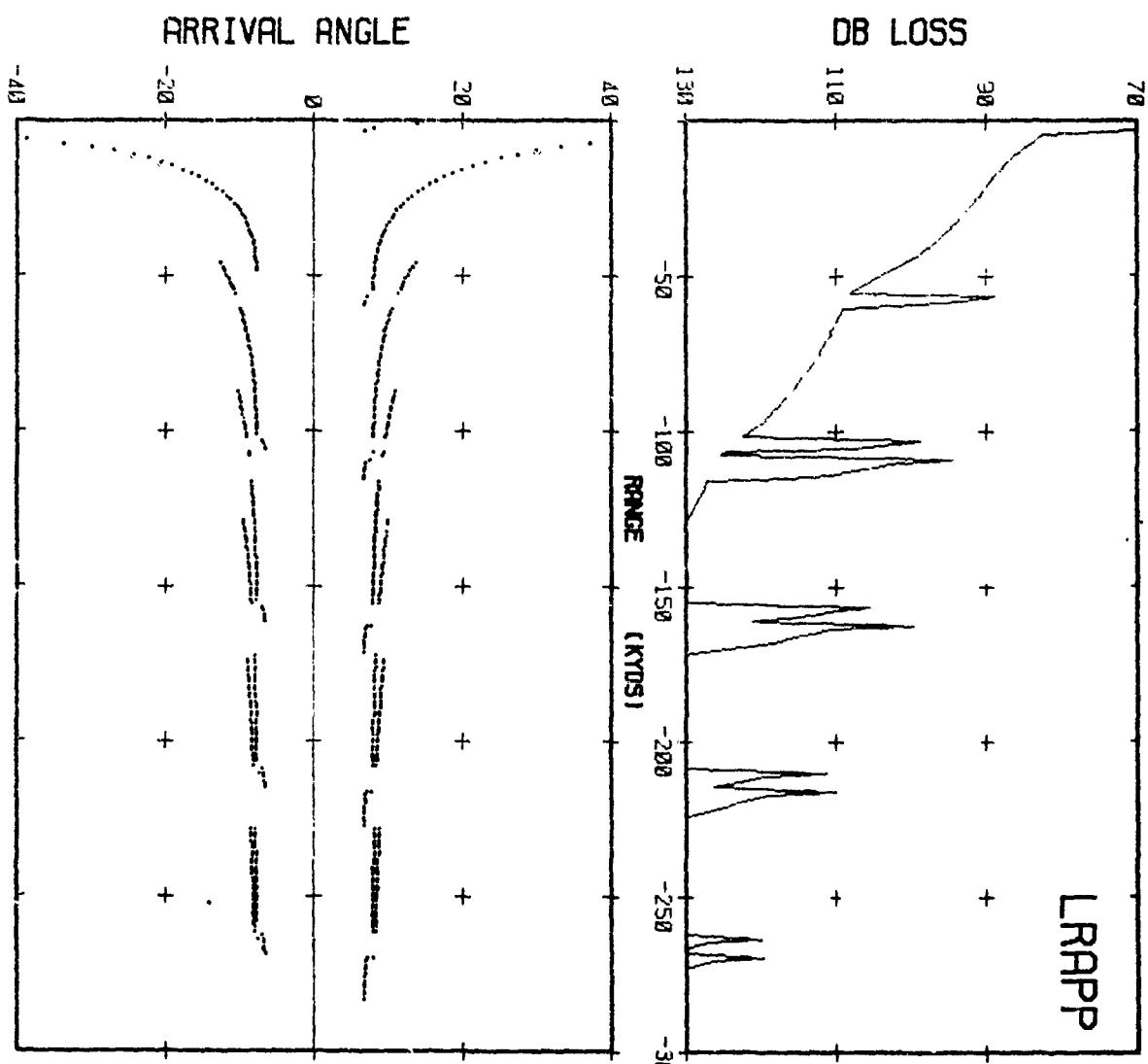
DEPTH IN METERS



TOTAL -43.8 dB

ARER A SUMMER S 28 R 1000 F 2000

1450 N/S 1500 1550



-0

AREA A4 SUMMER

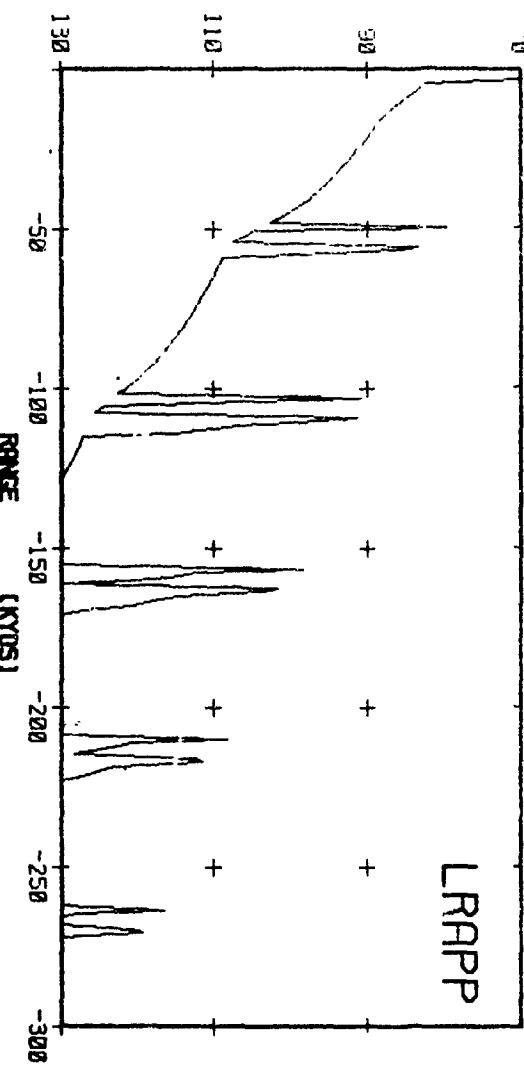
S 50 R 1000 F 2000

1450 M/S

1500

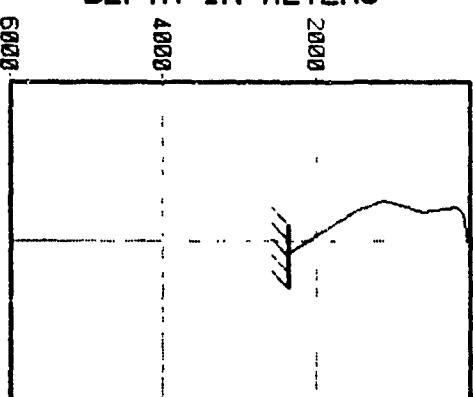
1550

DB LOSS

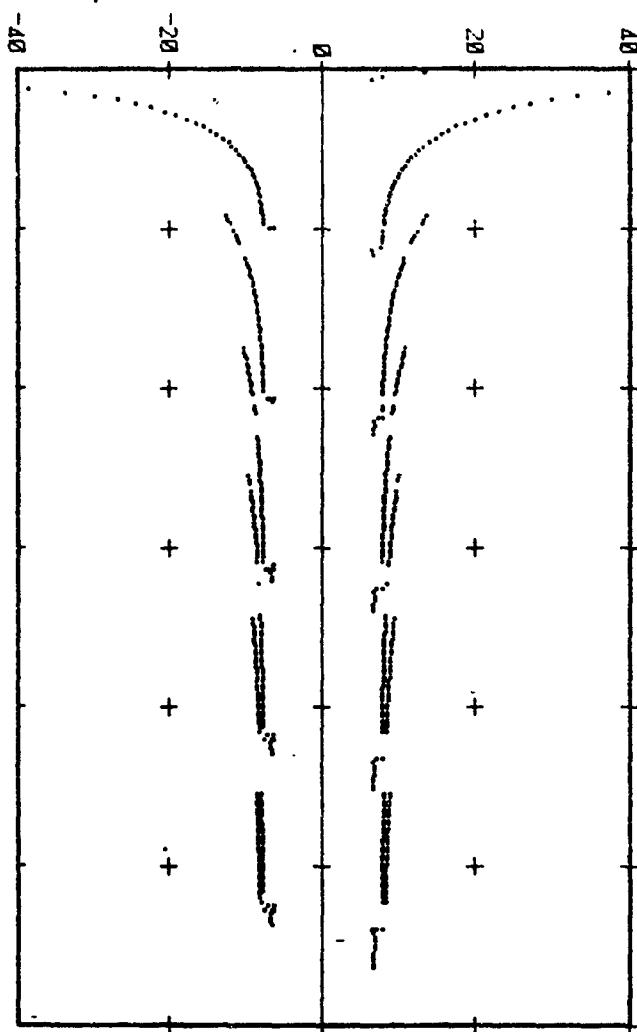


L RAPP

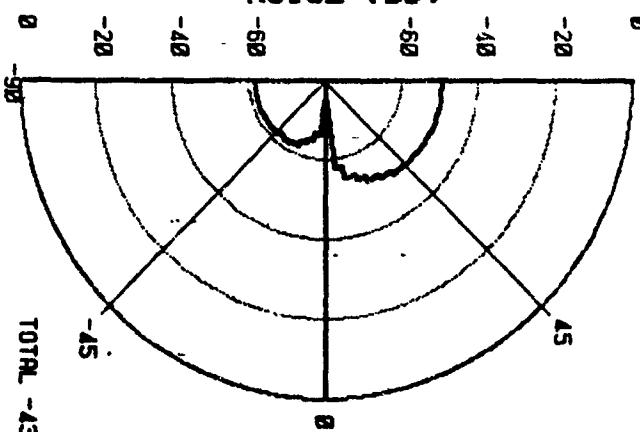
DEPTH IN METERS



ARRIVAL ANGLE

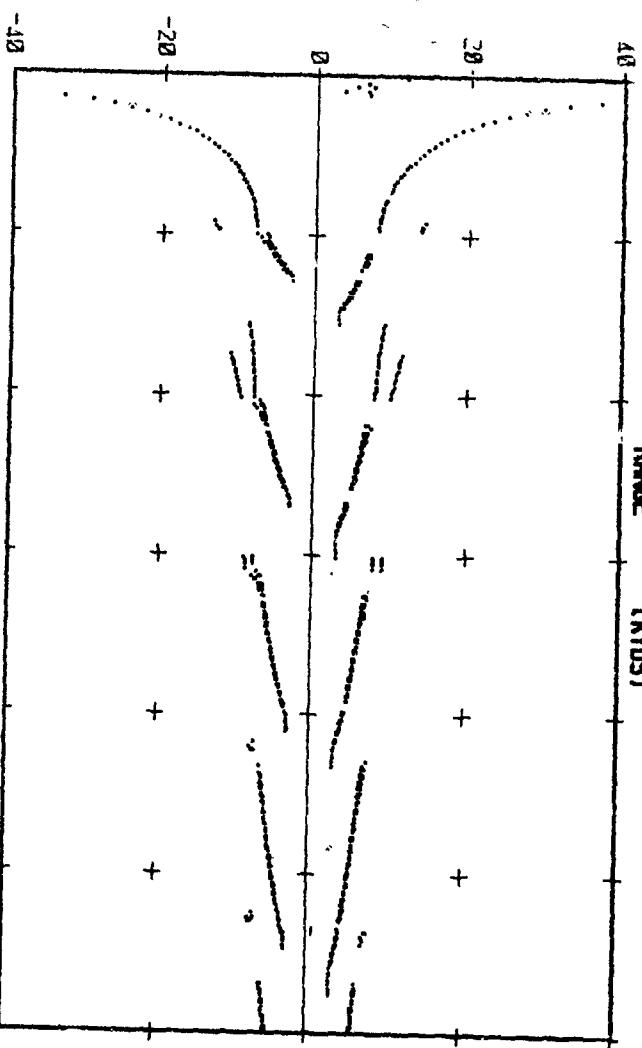


NOISE (DB)

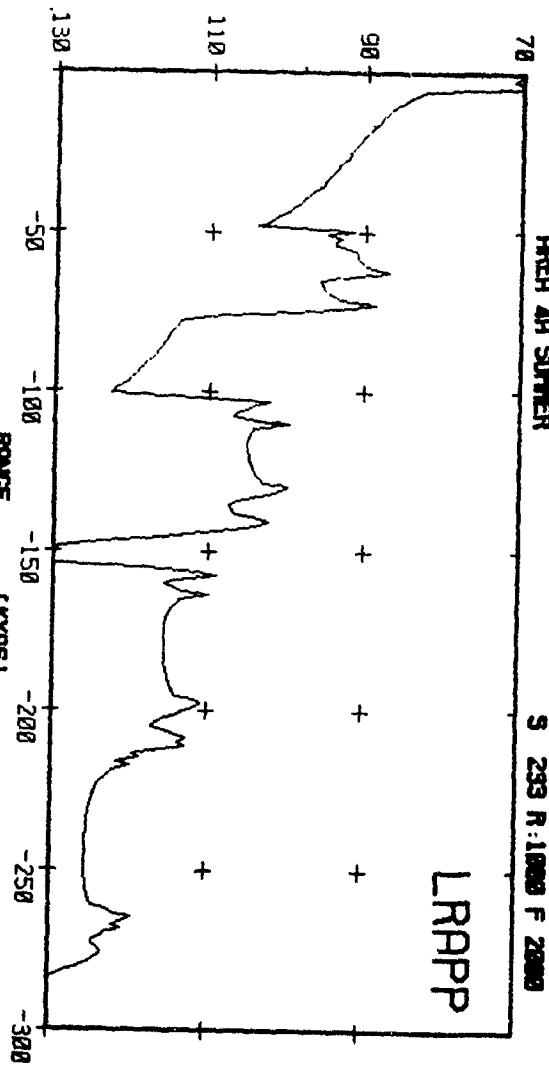


TOTAL -43.8 DB

ARRIVAL ANGLE



DB LOSS



LRAPP

70

FREE AIR SUMMER

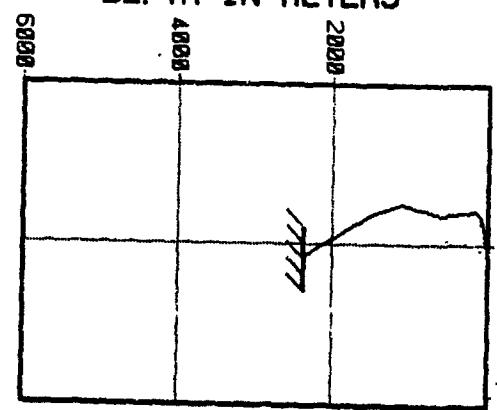
S 233 R:1000 F 2000

1450 M/S

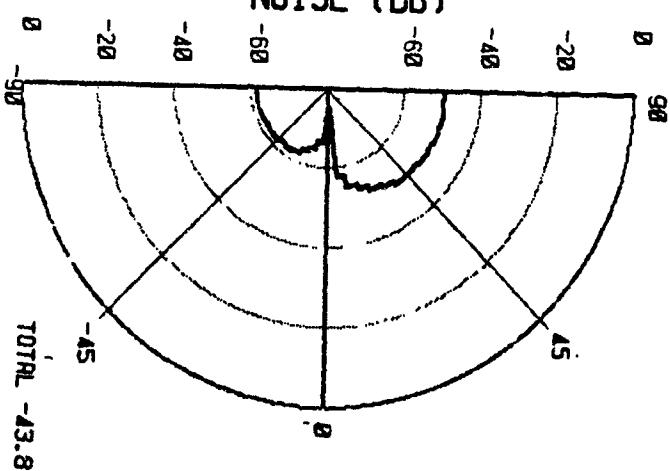
1500

1550

DEPTH IN METERS



NOISE (DB)



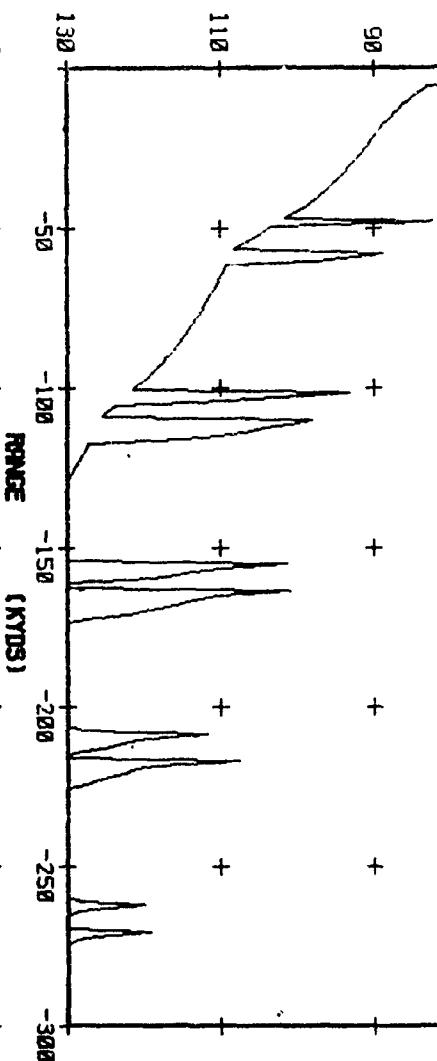
70

ARR 4A SUMMER

S 28 R 1580 F 2000

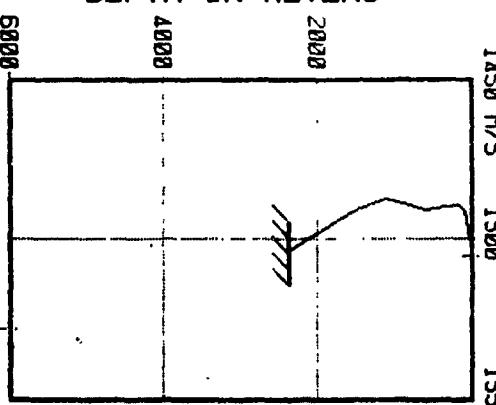
1450 M/S 1500 1550

DB LOSS

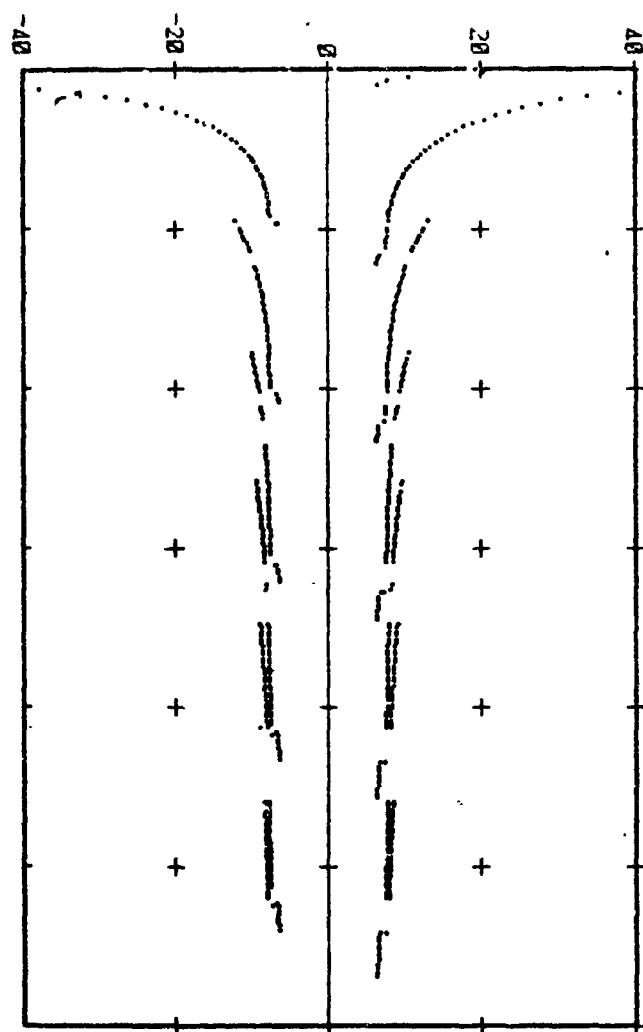


LRAPP

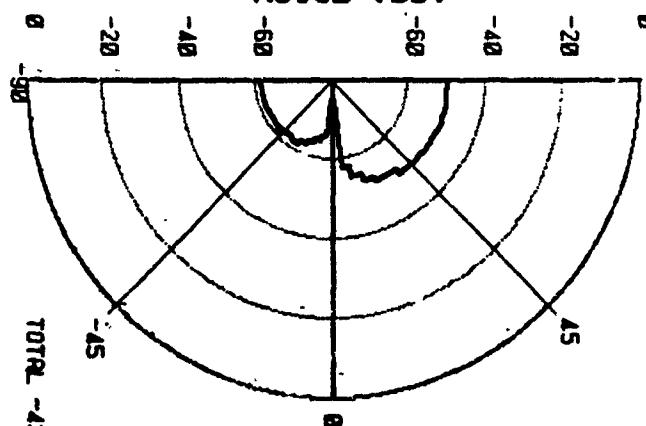
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)



TOTAL -43.9 DB

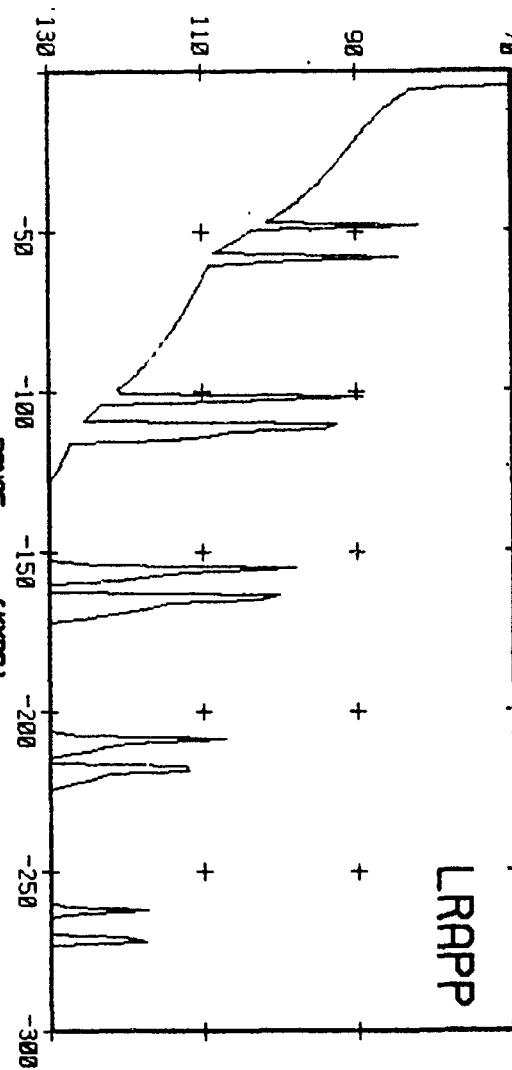
AREA 4A SUMMER

S 50 R 1500 F 2000

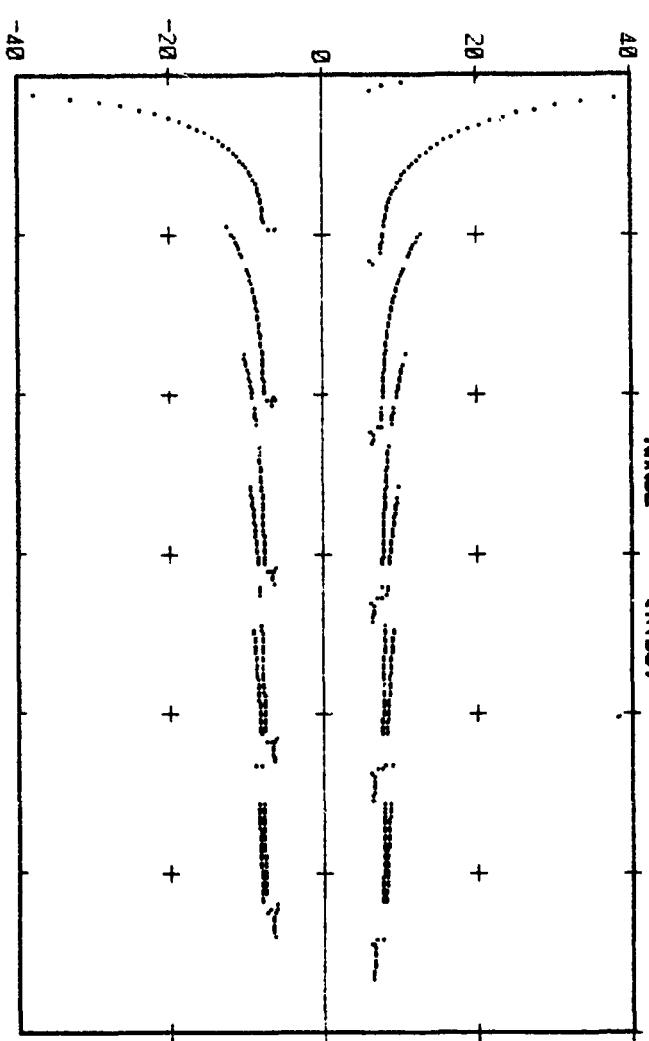
LRAPP

1450 M/S. 1500 1550

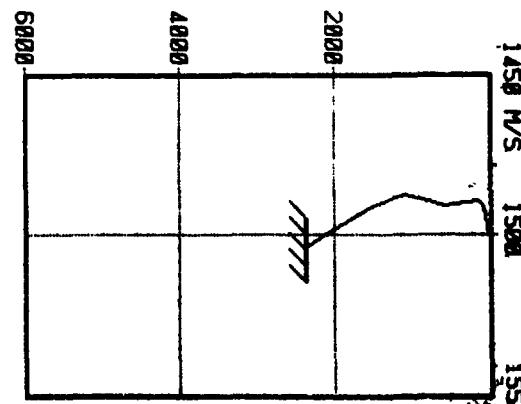
DB LOSS



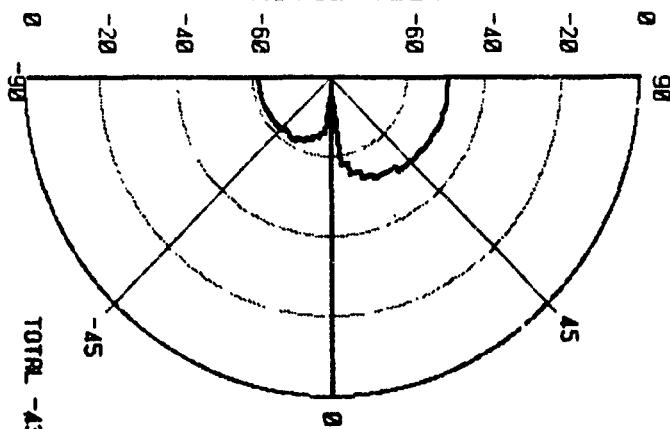
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



TOTAL -43.9 DB

78

ARR 4A SUMMER

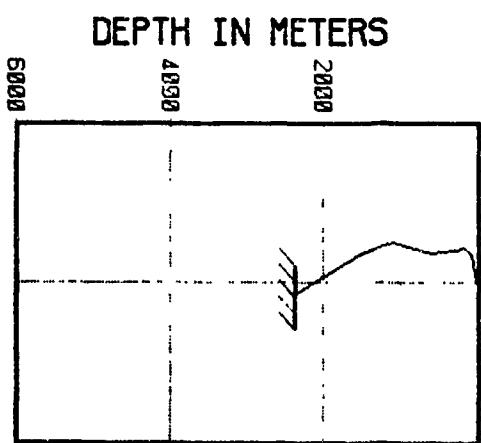
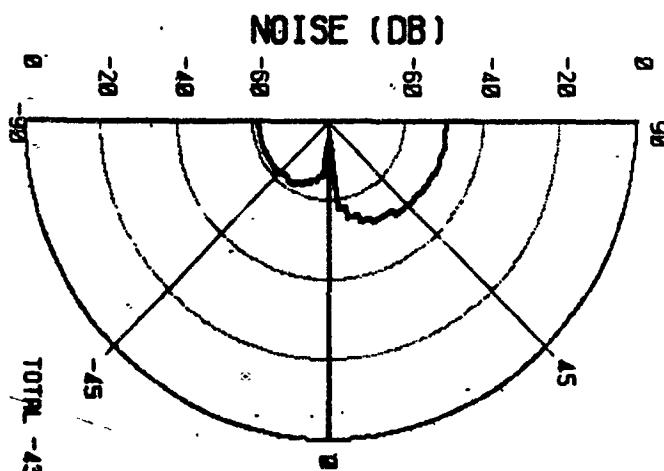
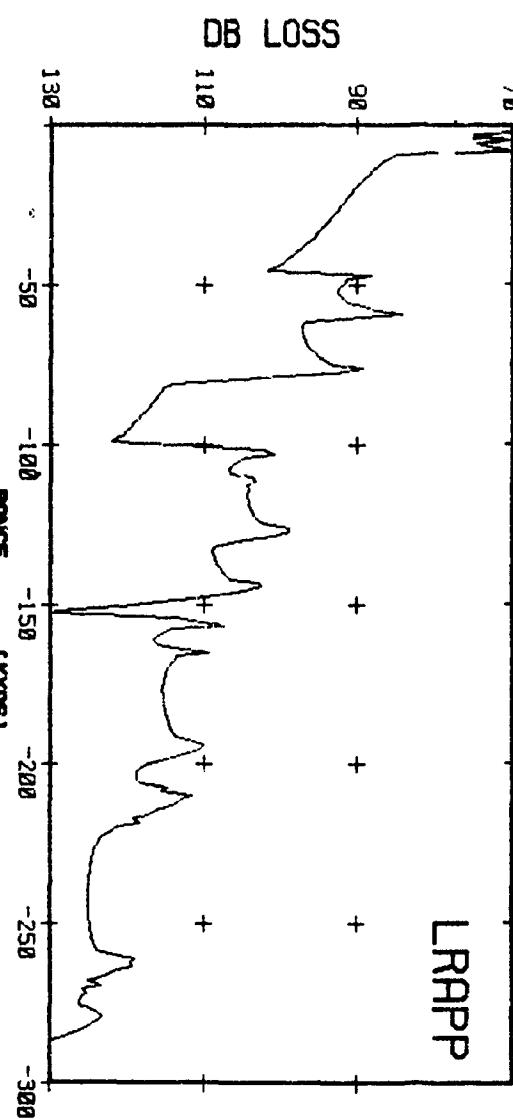
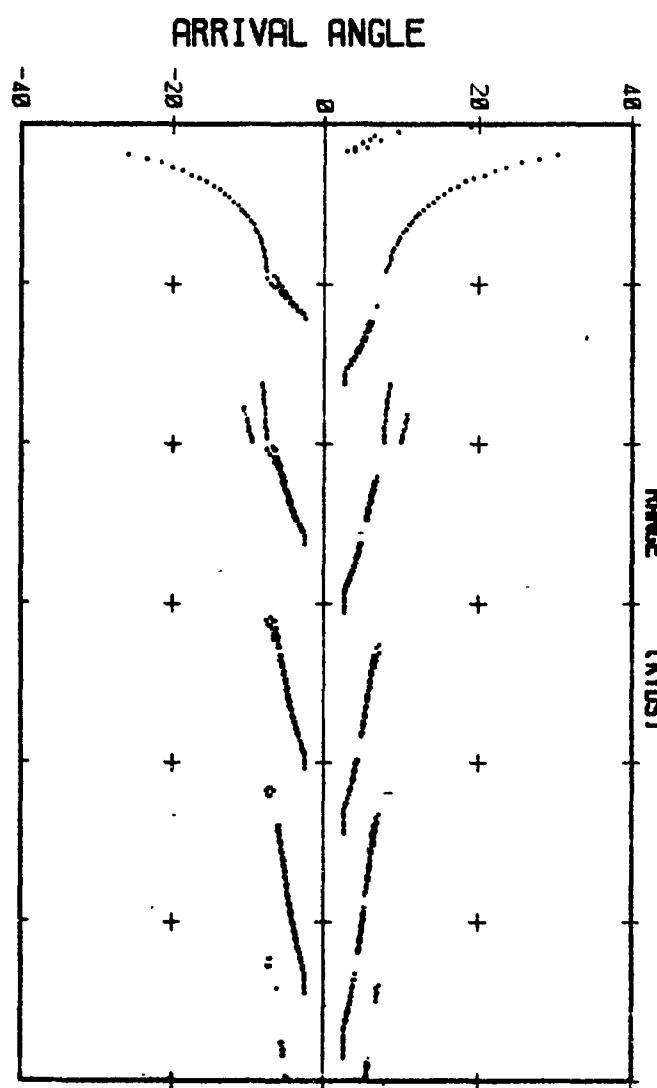
S

LRAPP

1450 M/S

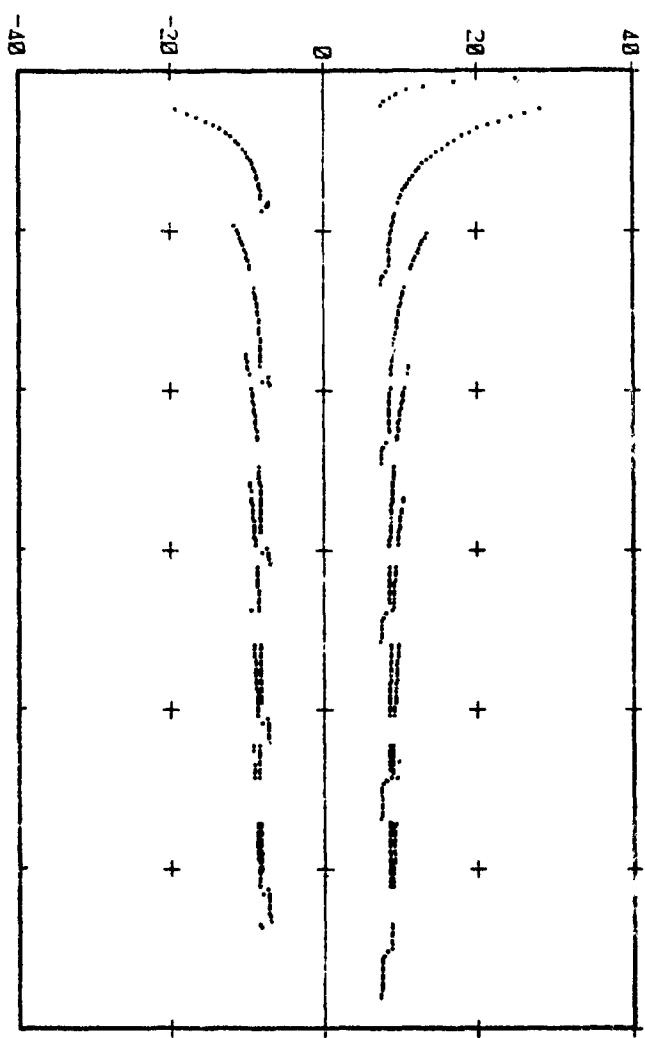
1500

1550

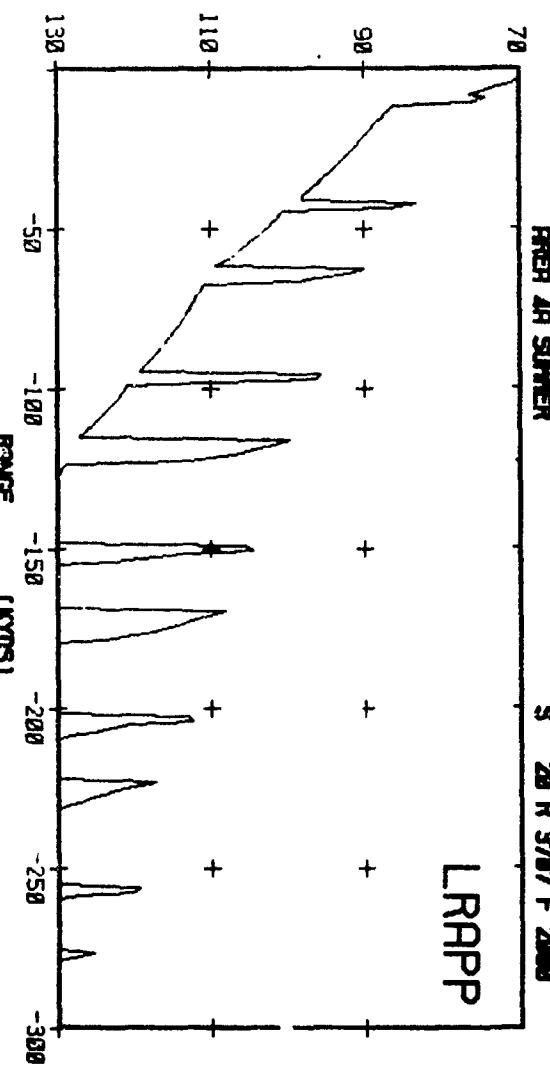


TOTAL -43.9 DB

ARRIVAL ANGLE



DB LOSS

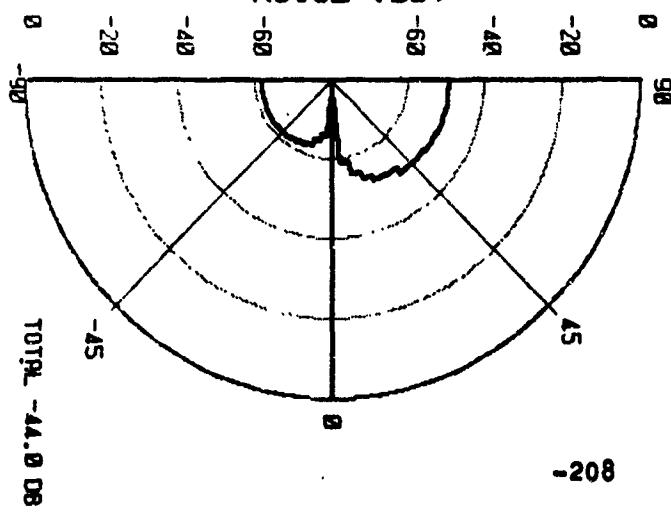


LRAPP

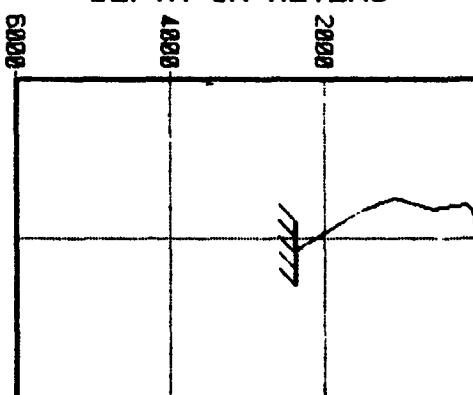
FRIER 4A SUMMER S 28 R 3707 F 2000

1450 M/S 1500 1550

NOISE (DB)



DEPTH IN METERS



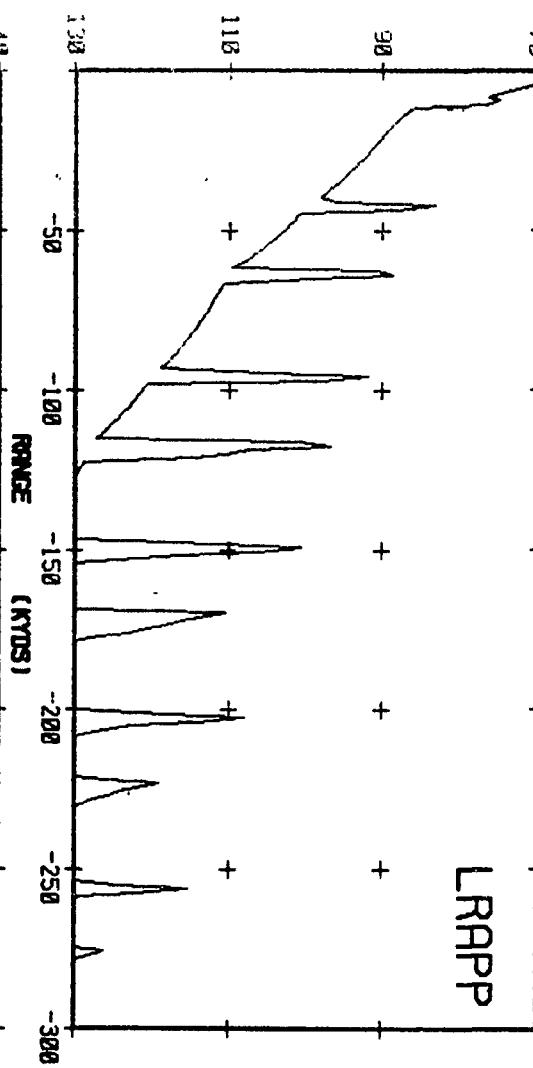
TOTAL -44.0 DB

ARR ARR SUMMER

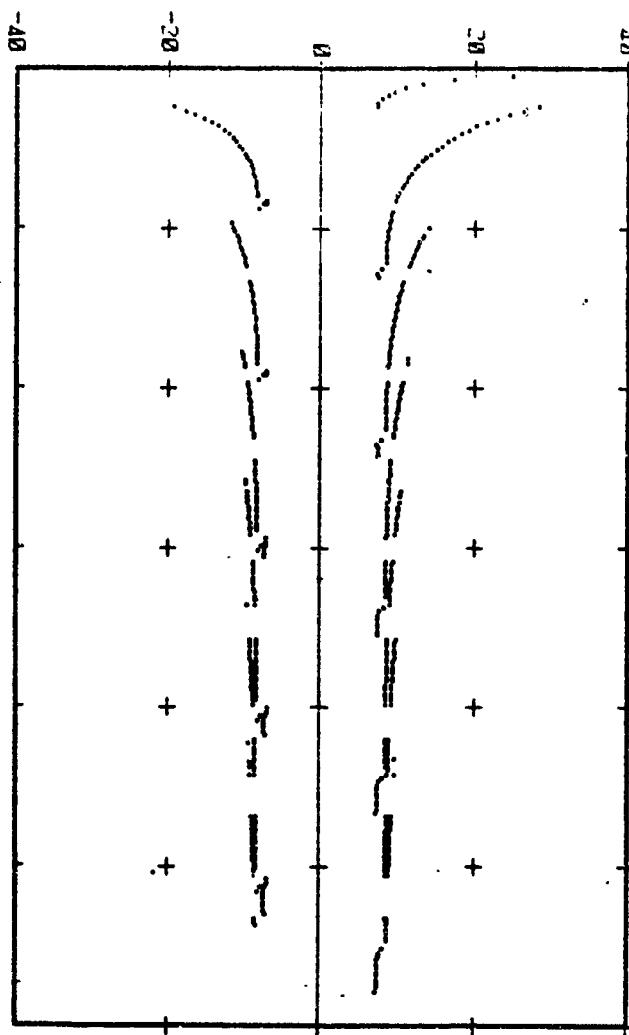
S 58 R 37E F 2000

1450 M/S 1500 1550

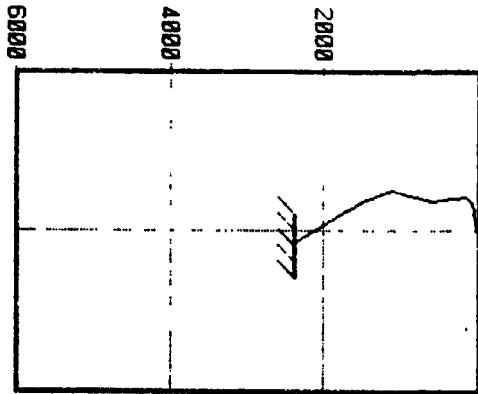
DB LOSS



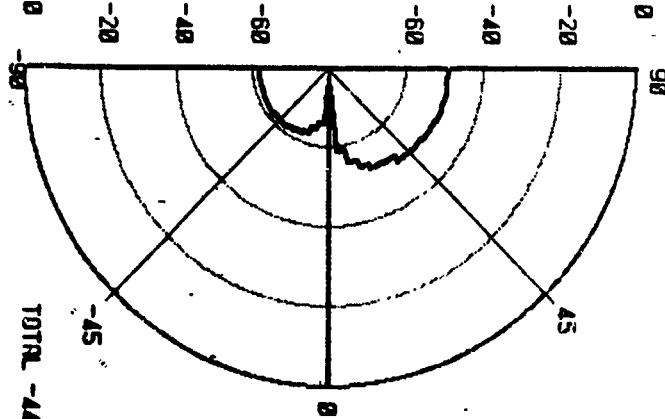
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



6/28 4R SUMMER

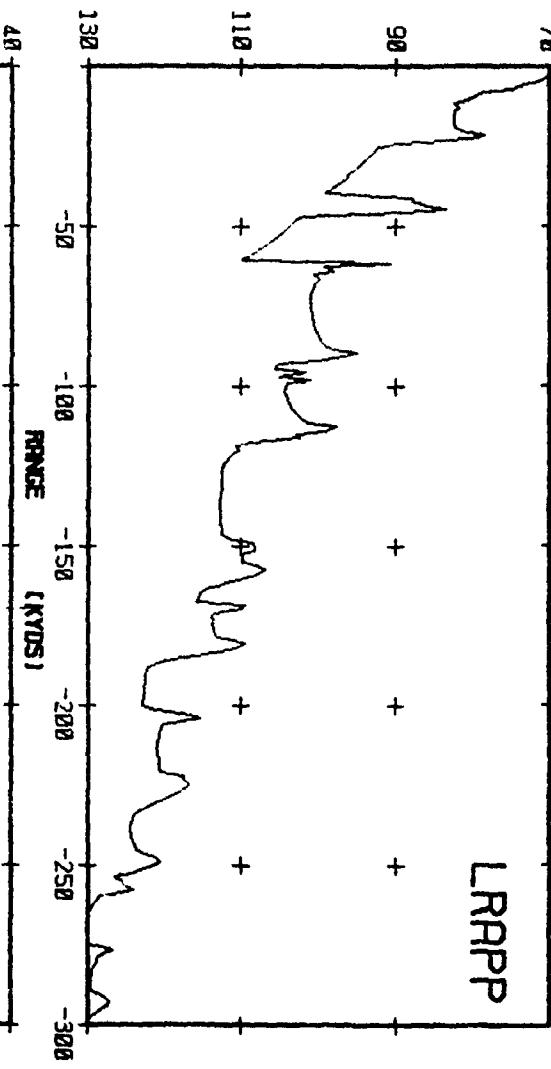
S 233 R 377 F 2000

1450 M/S 1500

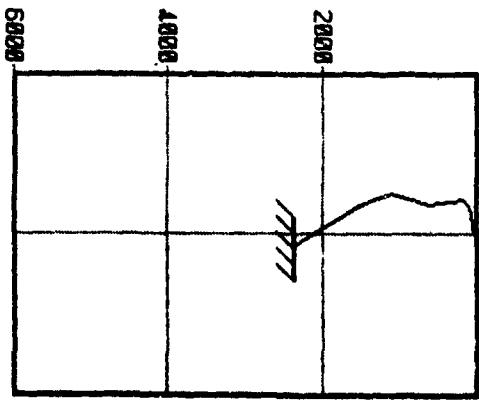
1550

LRAFP

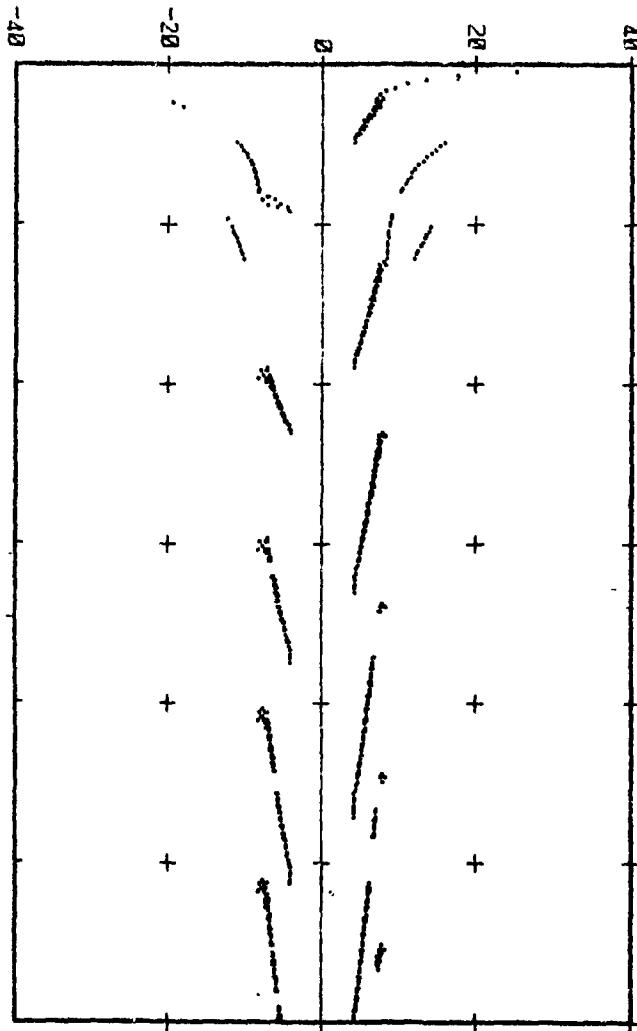
DB LOSS



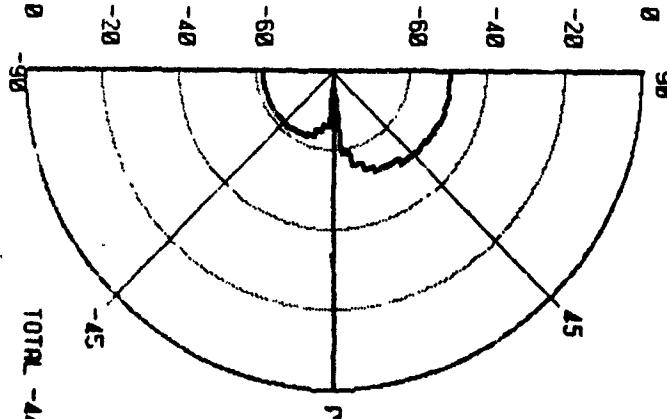
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)



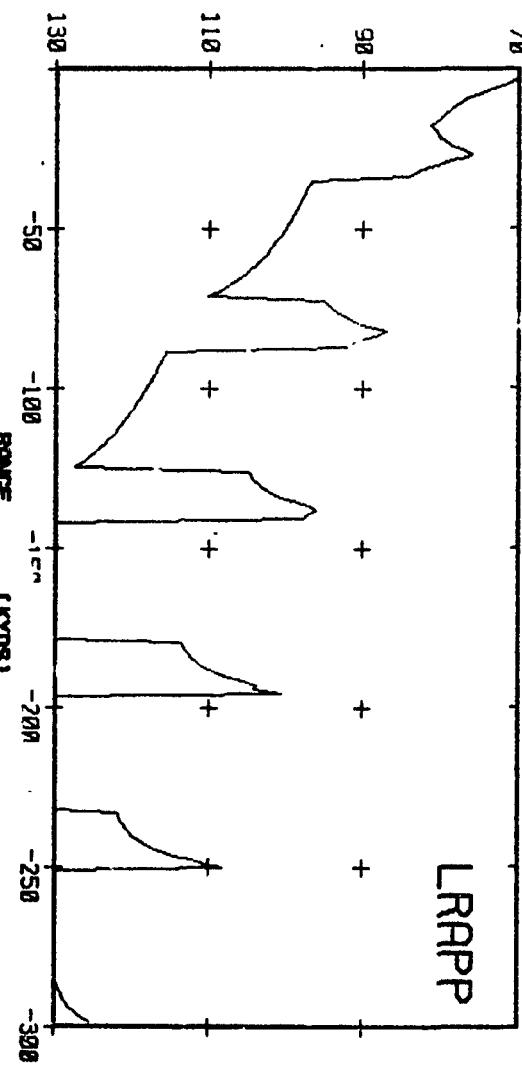
AREA 4A SUMMER

S 20 R 6555 F 2069

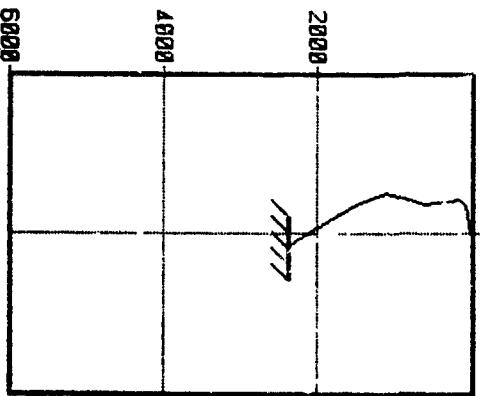
1450 M/S 1500 1550

LRAAPP

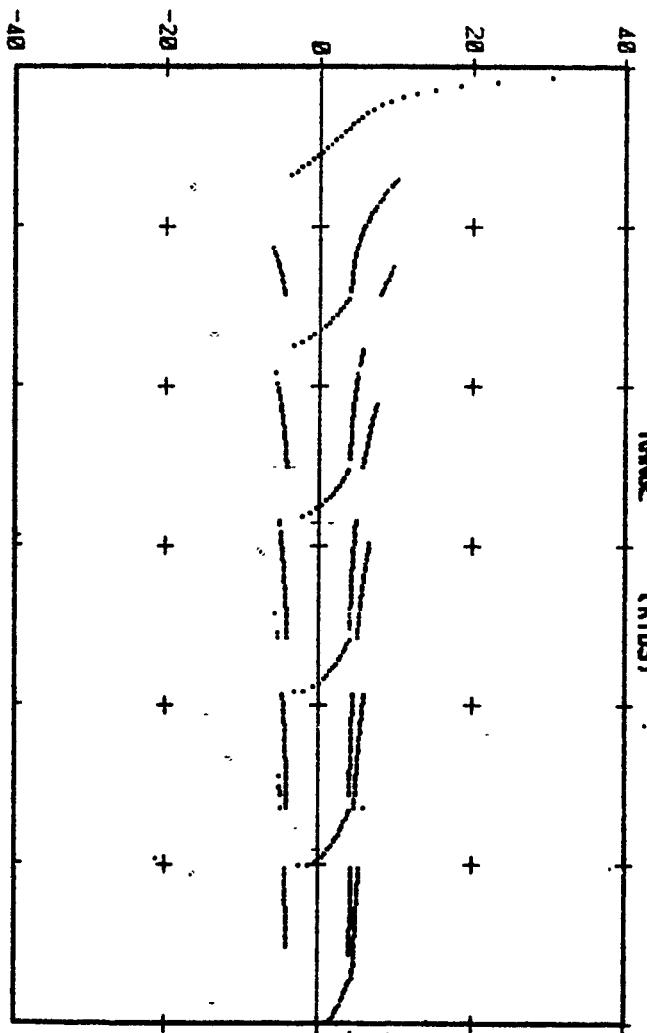
DB LOSS



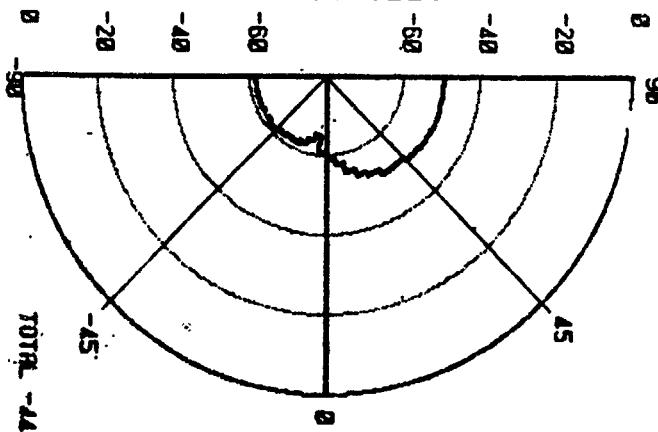
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)



TOTAL -44.8 DB

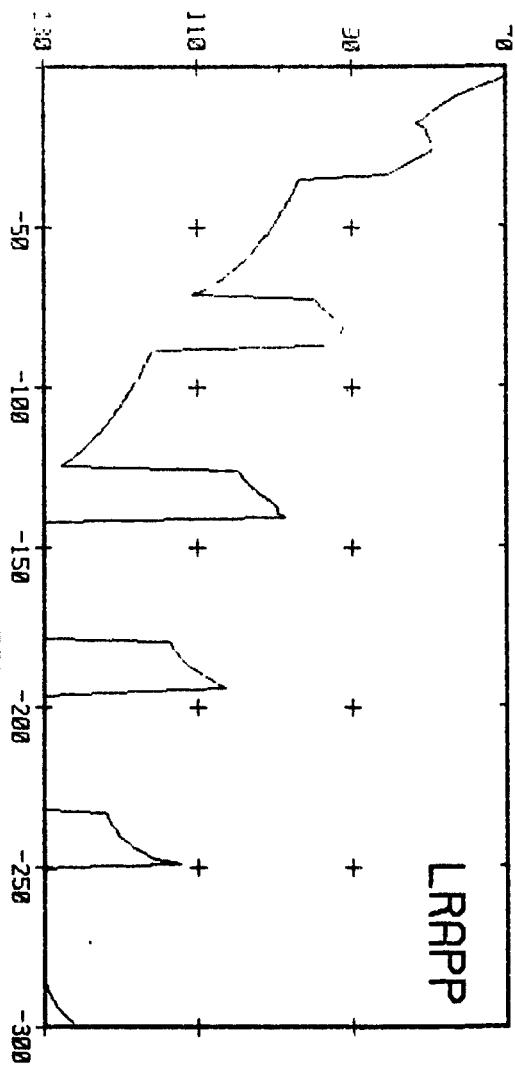
RARE AIR SUMMER

S 50 R 6658 F 2000

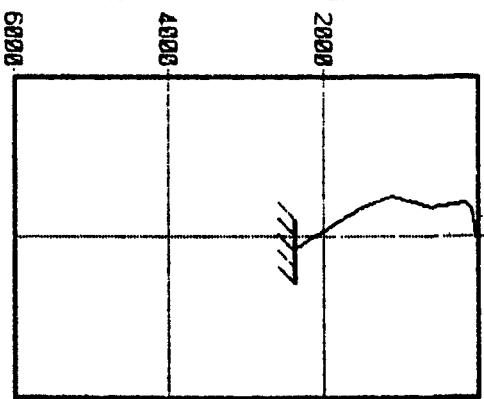
1450 M/S 1500 1550

LRAPP

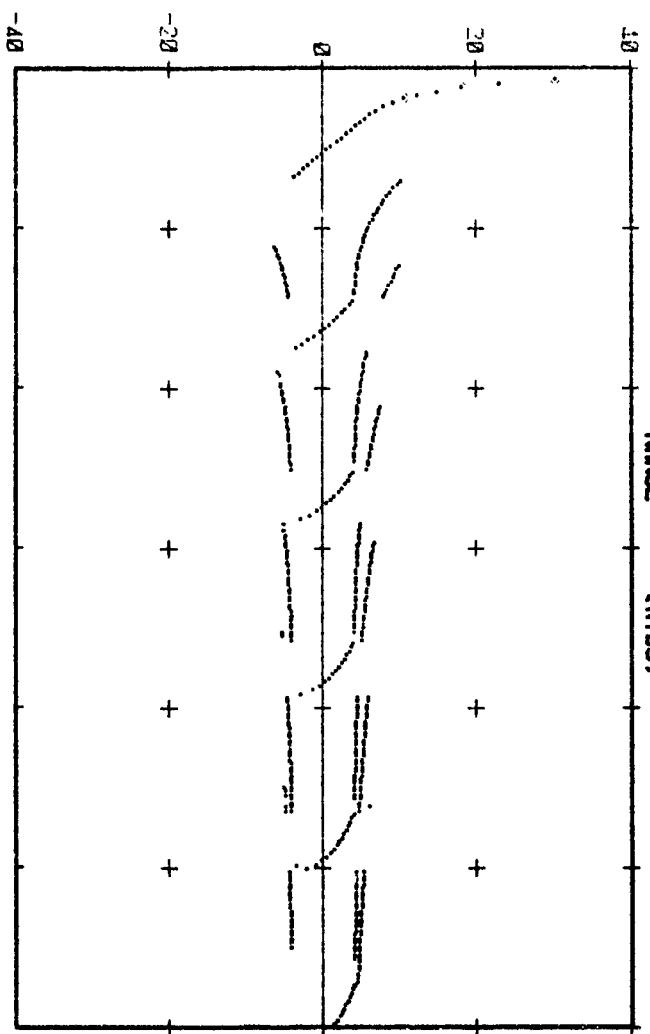
DB LOSS



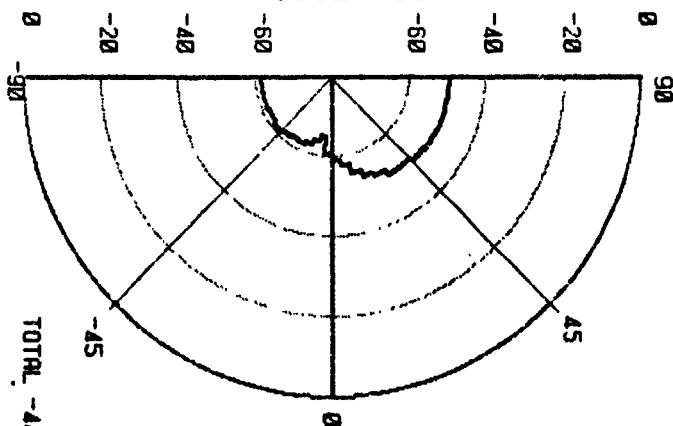
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)



TOTAL. -44.0 DB

78

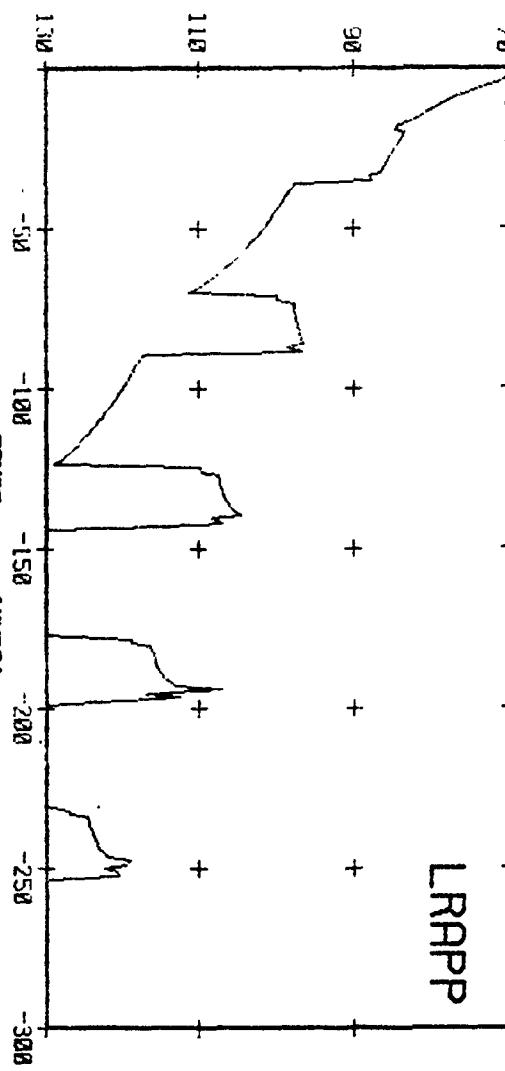
ARR 4R SUMMER

S 233 R 6958 F 2000

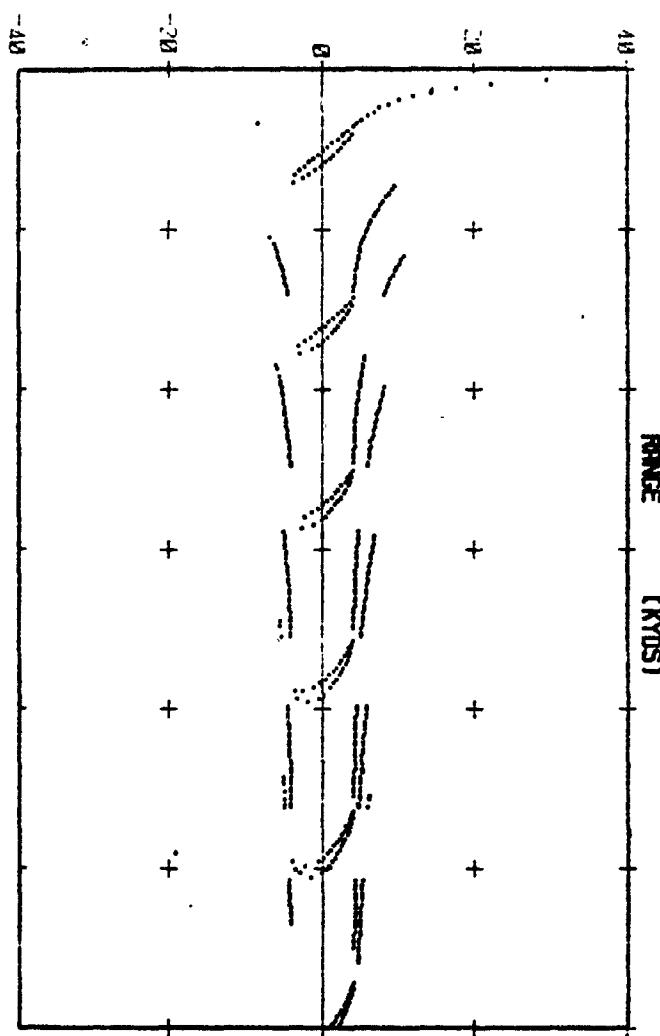
1450 M/S 1500 1550

LRAPP

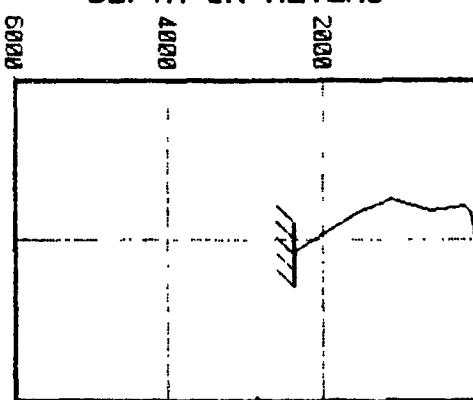
DB LOSS



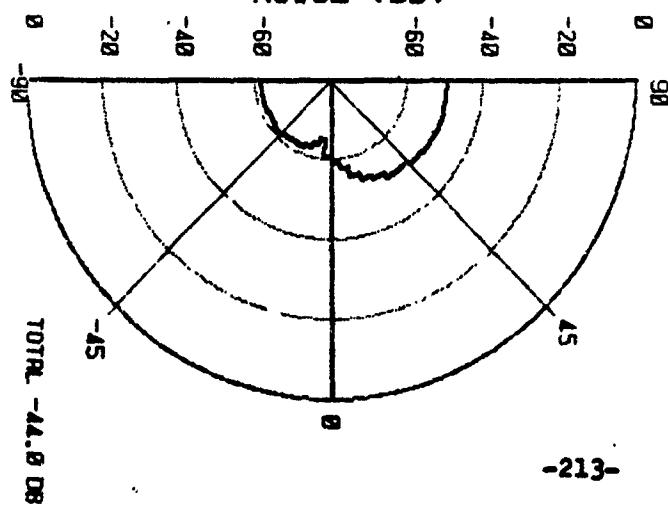
ARRIVAL ANGLE

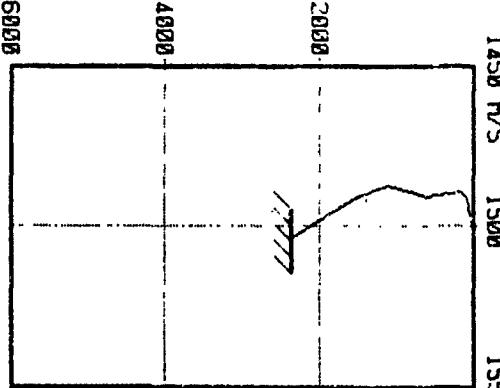
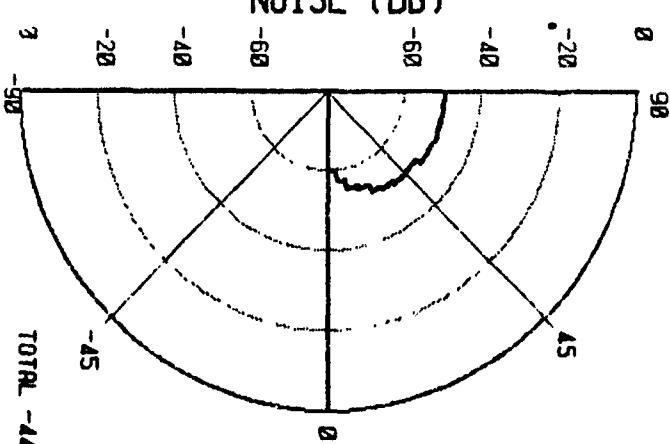
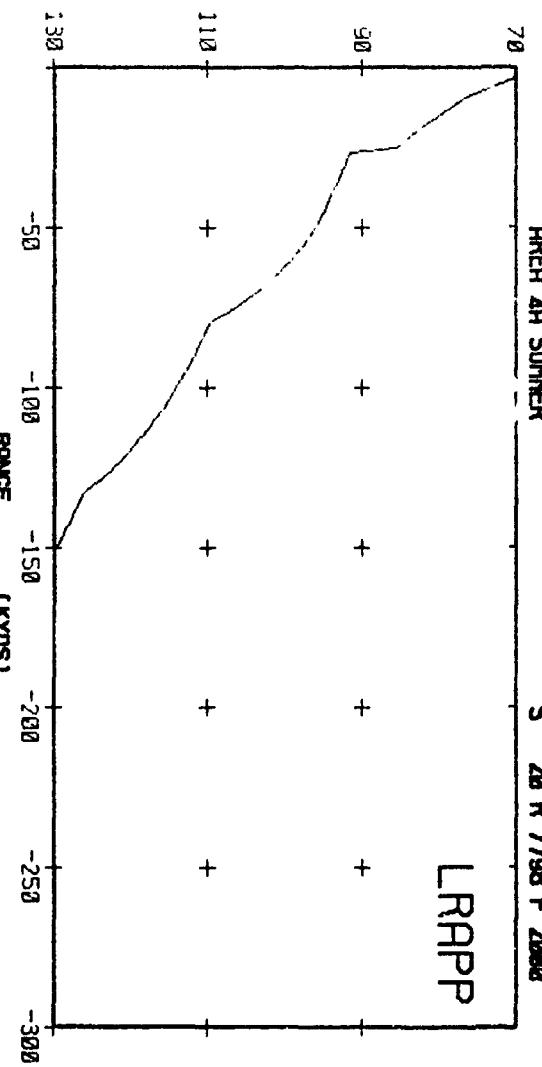
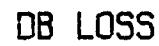
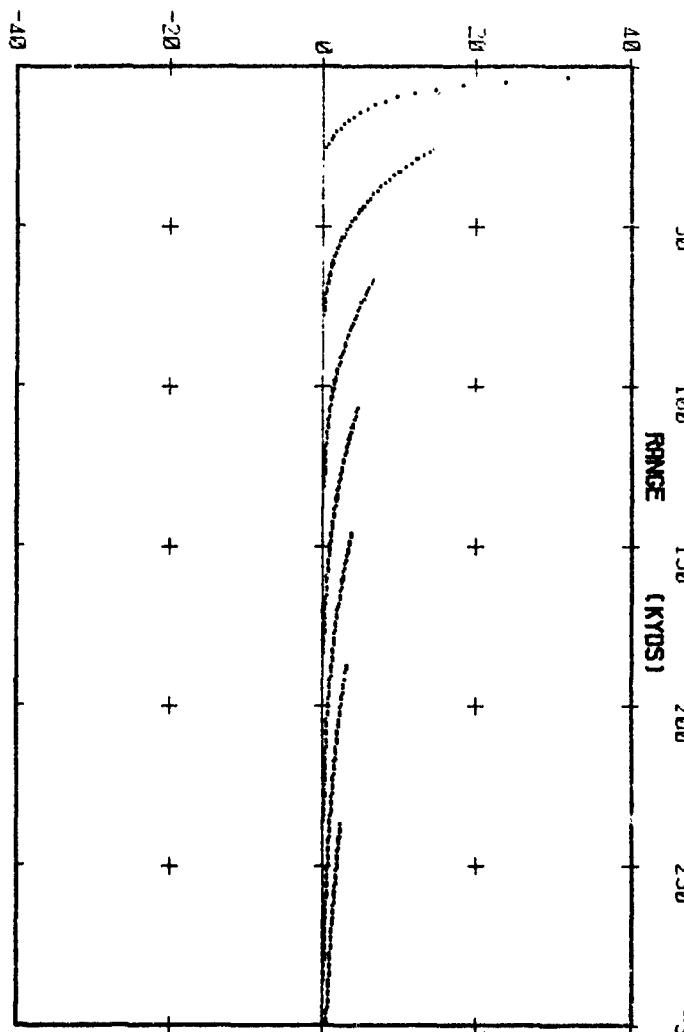


DEPTH IN METERS



NOISE (DB)



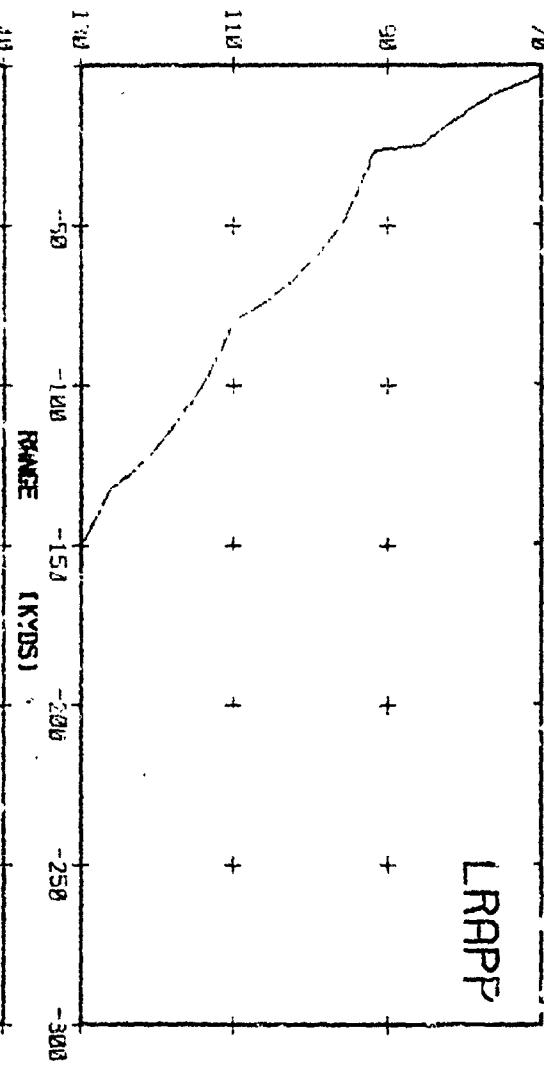


AREA 4A SUMMER

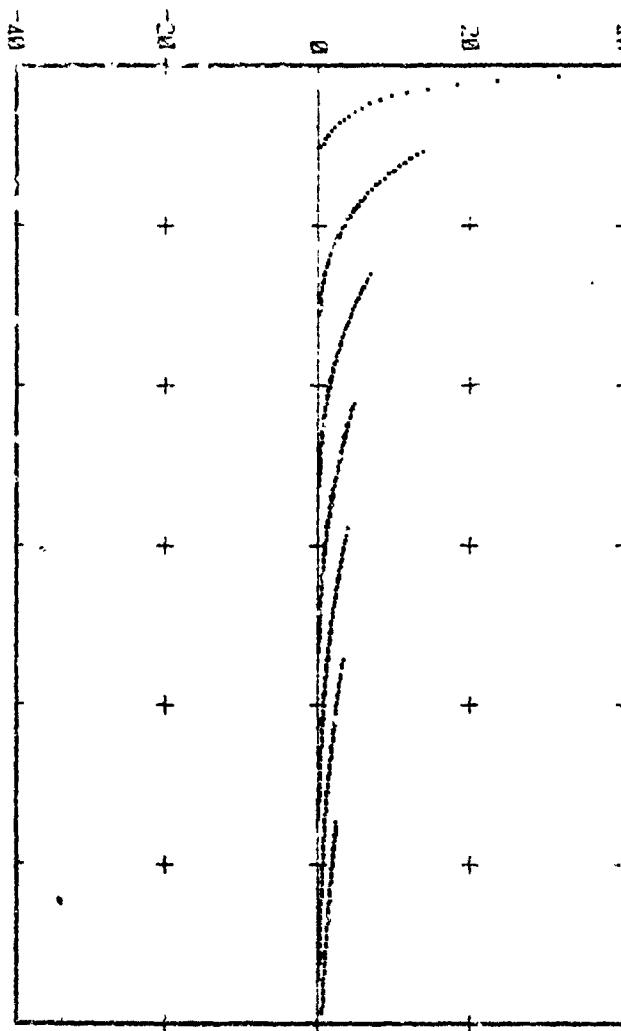
S 59 R 7708 E 3000

145° M/S 1584 1558

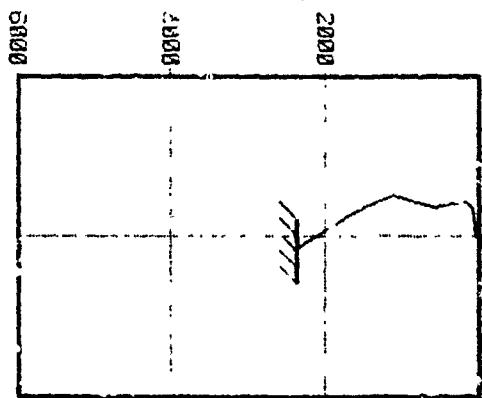
DB LOSS



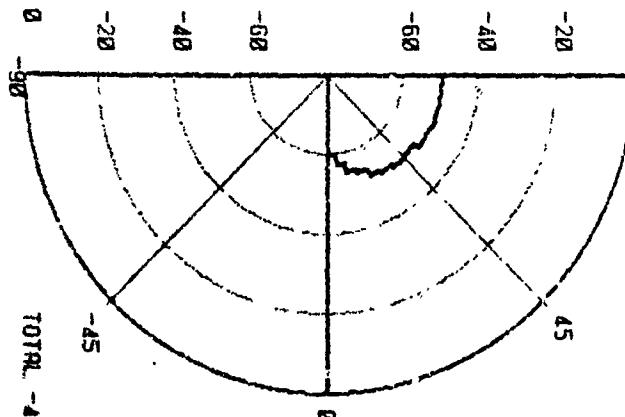
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



73

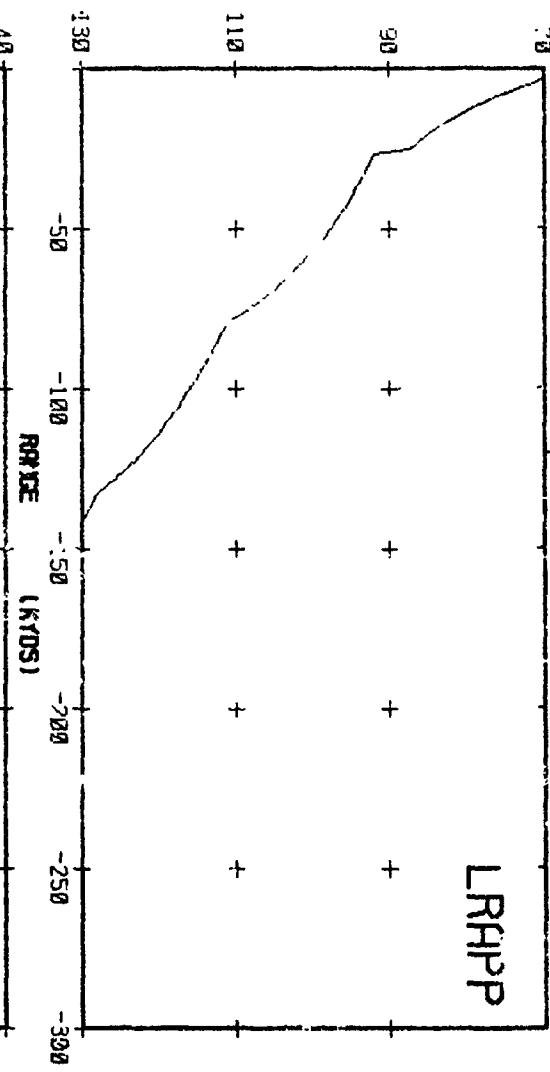
ARR 4R SUMMER

S 233 R 7788 F 2000

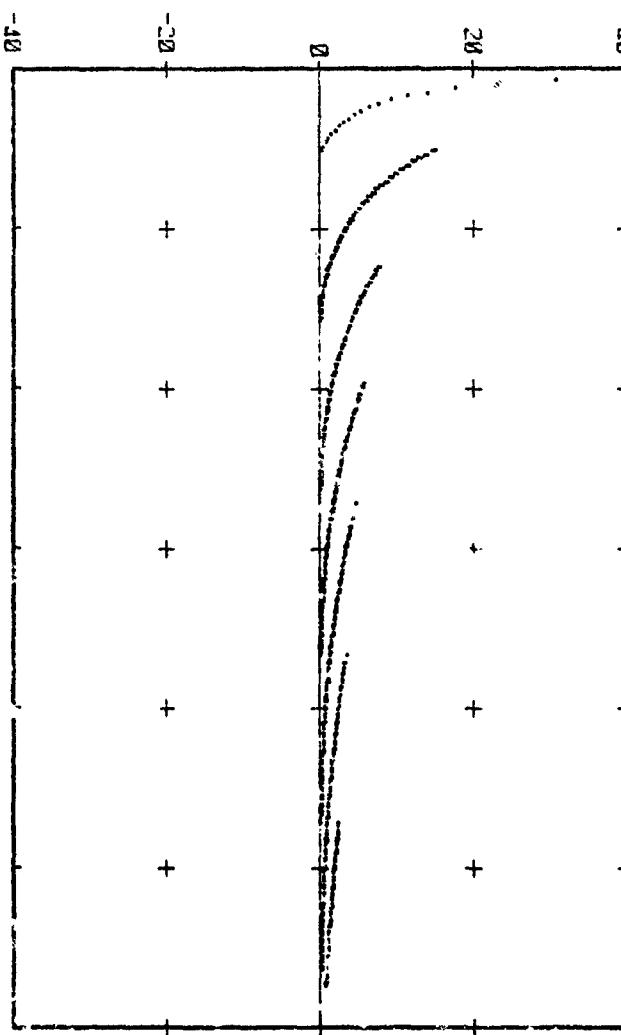
1458 M/S 1500 1550

LRHAPP

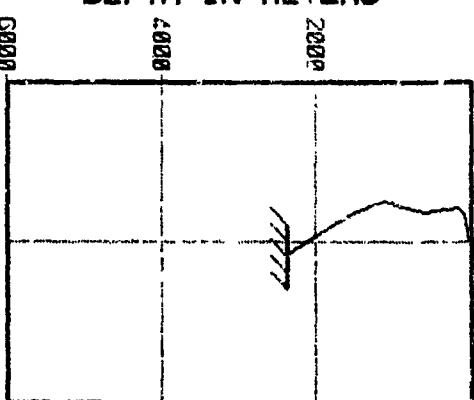
DB LOSS



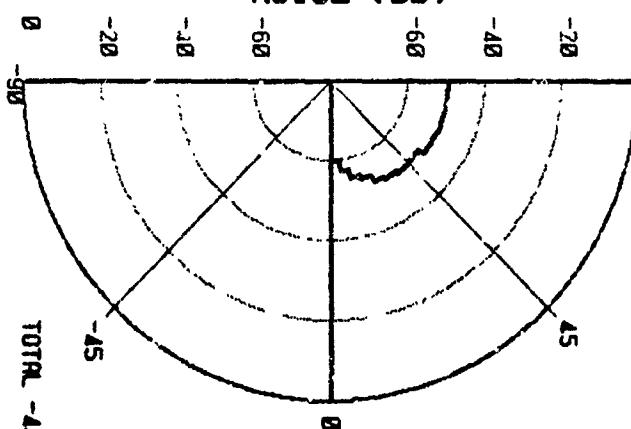
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



TOTAL -44.4 DB

PRED 4R SUMMER

S 28 R 60 F 2500

1450 M/S 1500 1550

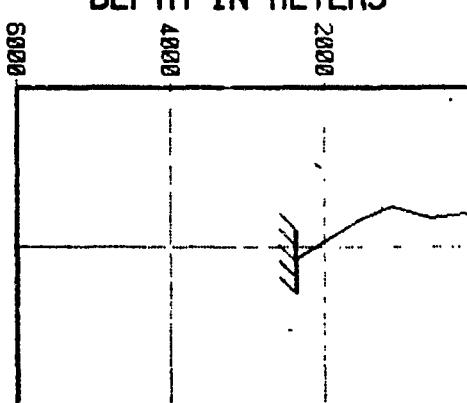
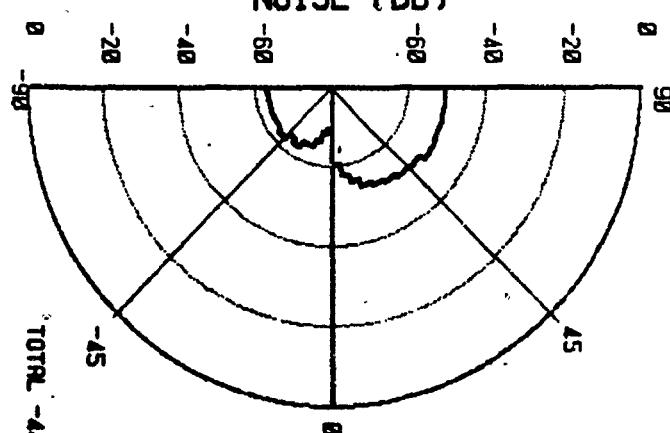
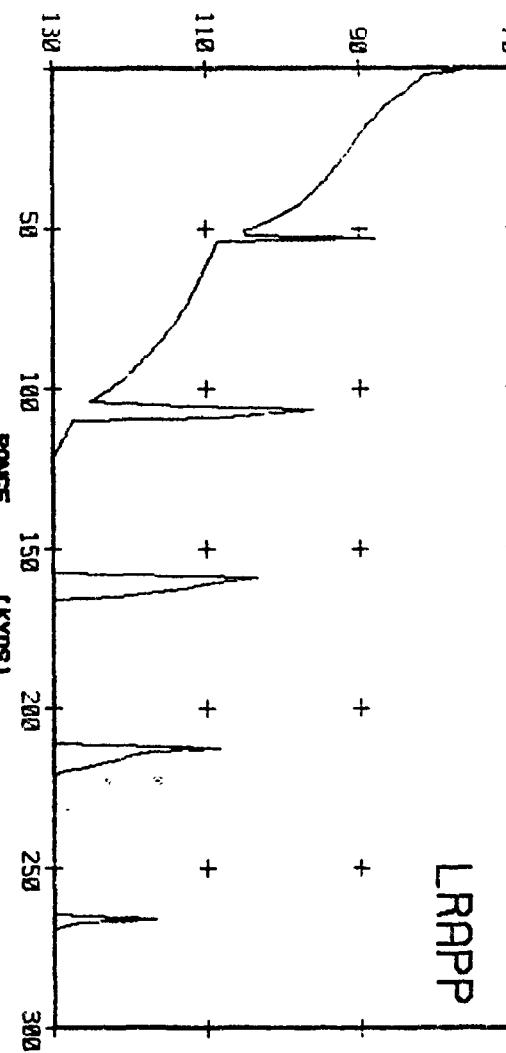
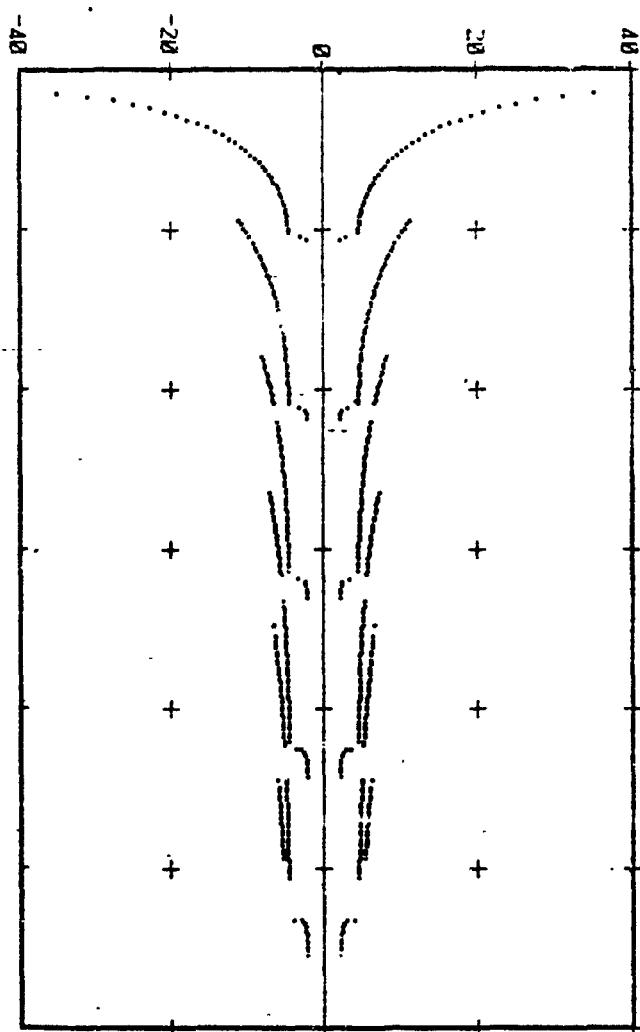
LRAPP

DB LOSS

DEPTH IN METERS

ARRIVAL ANGLE

NOISE (DB)



TOTAL -44.7 DB

PRED AIR SUMMER

S 50 R 60 F 2500

1450 M/S 1500 1550

LRAPP

DB LOSS

134
110
90
70

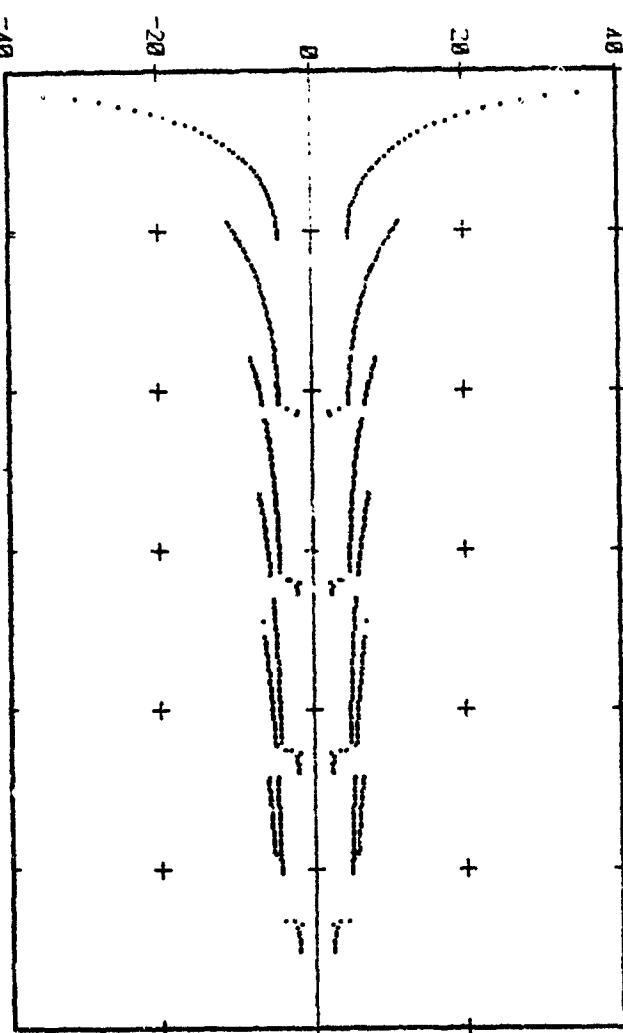
6000

4000
2000

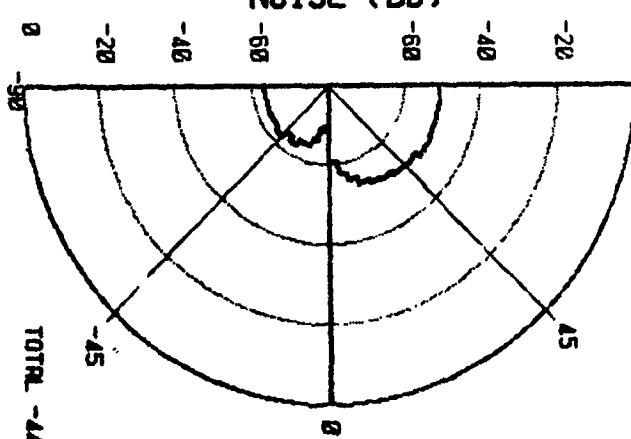
DEPTH IN METERS

5000
4000
3000
2000
1000

ARRIVAL ANGLE



NOISE (DB)



78

FREQUENCIES

S 253 R 60 F 250

1450 HFS 1500 1550

LRAPP

DB LOSS

130

-50

110

-100

-150

-200

-250

-300

RANGE (KMS)

ARRIVAL ANGLE

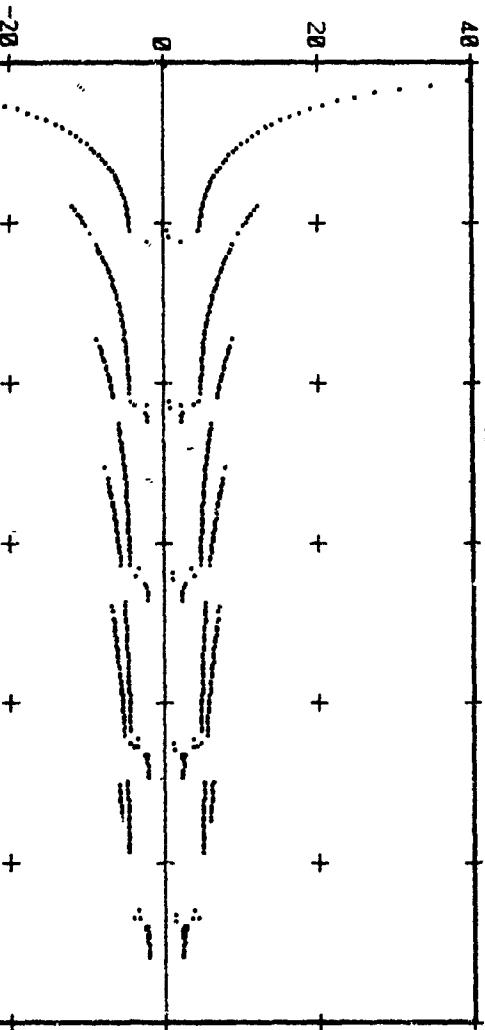
-40

-20

0

20

40



DEPTH IN METERS

2000

4000

6000

0

4000

6000

8000

10000

130

-50

110

-100

-150

-200

-300

-400

-600

-800

-1000

-1200

-1400

-1600

-1800

-2000

-2200

-2400

-2600

-2800

-3000

-3200

-3400

-3600

-3800

-4000

-4200

-4400

-4600

-4800

-5000

-5200

-5400

-5600

-5800

-6000

-6200

-6400

-6600

-6800

-7000

-7200

-7400

-7600

-7800

-8000

-8200

-8400

-8600

-8800

-9000

-9200

-9400

-9600

-9800

-10000

-10200

-10400

-10600

-10800

-11000

-11200

-11400

-11600

-11800

-12000

-12200

-12400

-12600

-12800

-13000

-13200

-13400

-13600

-13800

-14000

-14200

-14400

-14600

-14800

-15000

-15200

-15400

-15600

-15800

-16000

-16200

-16400

-16600

-16800

-17000

-17200

-17400

-17600

-17800

-18000

-18200

-18400

-18600

-18800

-19000

-19200

-19400

-19600

-19800

-20000

-20200

-20400

-20600

-20800

-21000

-21200

-21400

-21600

-21800

-22000

-22200

-22400

-22600

-22800

-23000

-23200

-23400

-23600

-23800

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-24200

-24400

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-24800

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-25200

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-26400

-26600

-26800

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-27200

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-27600

-27800

-28000

-28200

-28400

-28600

-28800

-29000

-29200

-29400

-29600

-29800

-30000

-30200

-30400

-30600

-30800

-31000

-31200

-31400

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-41000

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-41400

-41600

-41800

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-42200

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-42600

-42800

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-43200

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-44000

-44200

-44400

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-45000

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-45400

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-47600

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-48800

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-49200

-49400

-49600

-49800

-50000

-50200

-50400

-50600

-50800

-51000

-51200

-51400

-51600

-51800

-52000

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-52400

-52600

-52800

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-53200

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-53600

-53800

-54000

-54200

-54400

-54600

-54800

-55000

-55200

-55400

-55600

-55800

-56000

-56200

-56400

-56600

-56800

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-58000

-58200

-58400

-58600

-58800

-59000

-59200

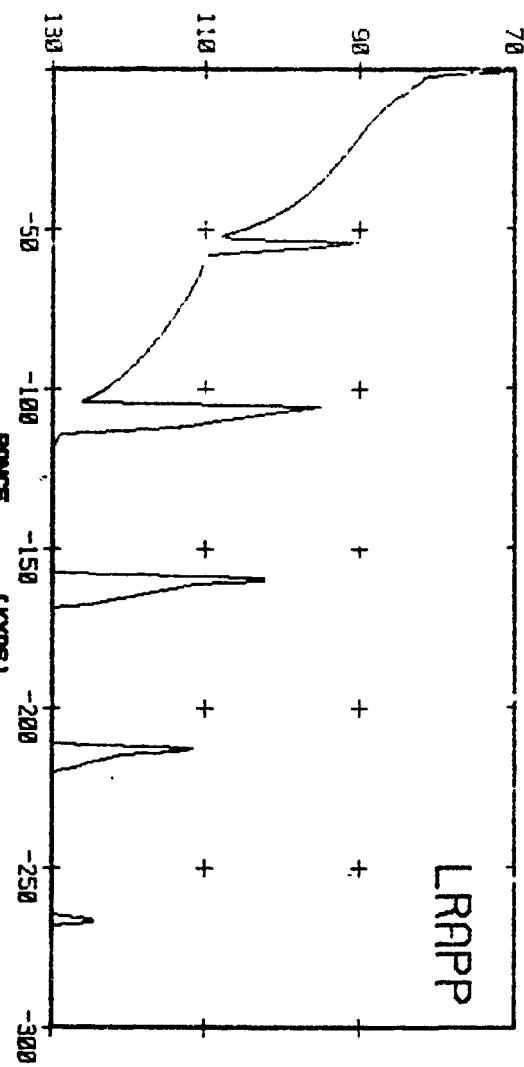
70

FREE AIR SUMMER

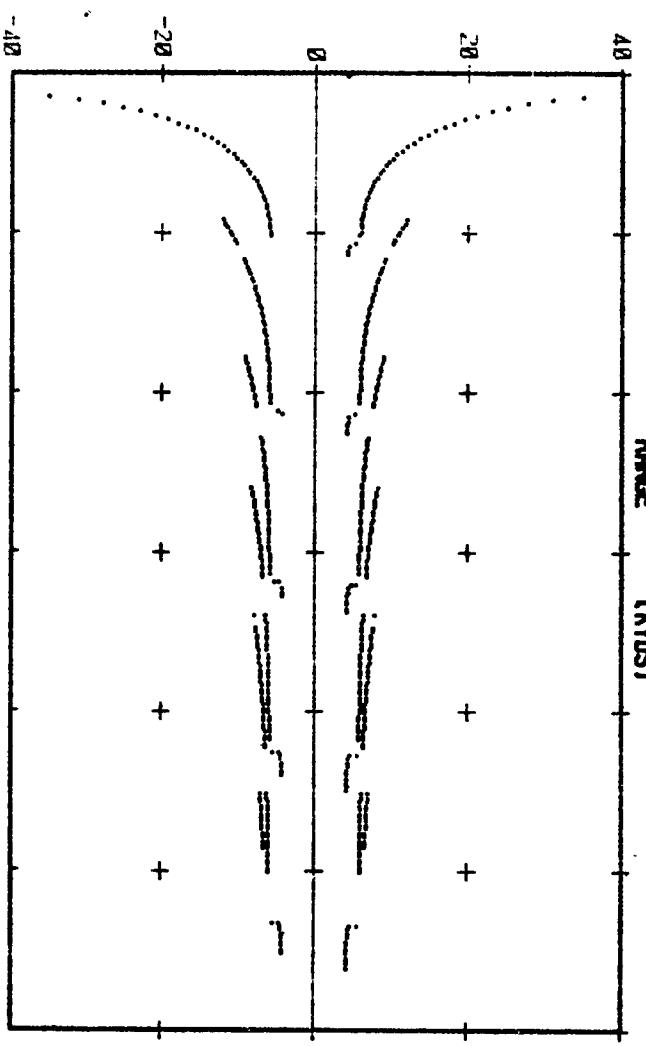
S 20 R 133 F 2580

1450 M/S 1500 1550

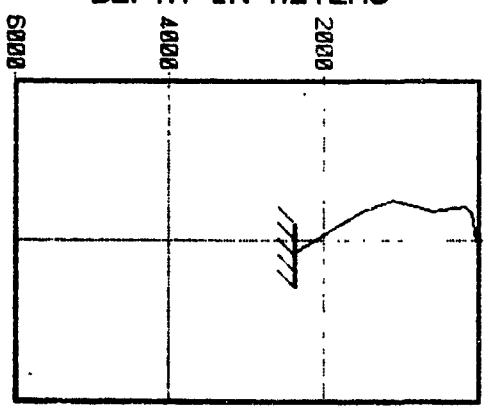
DB LOSS



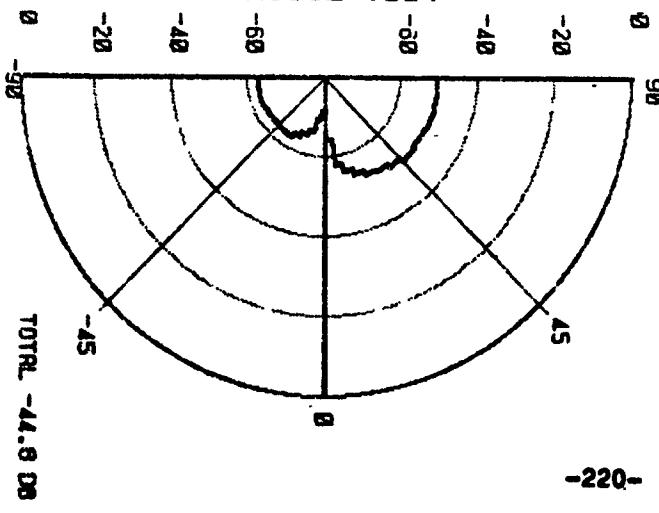
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



TOTAL -44.8 DB

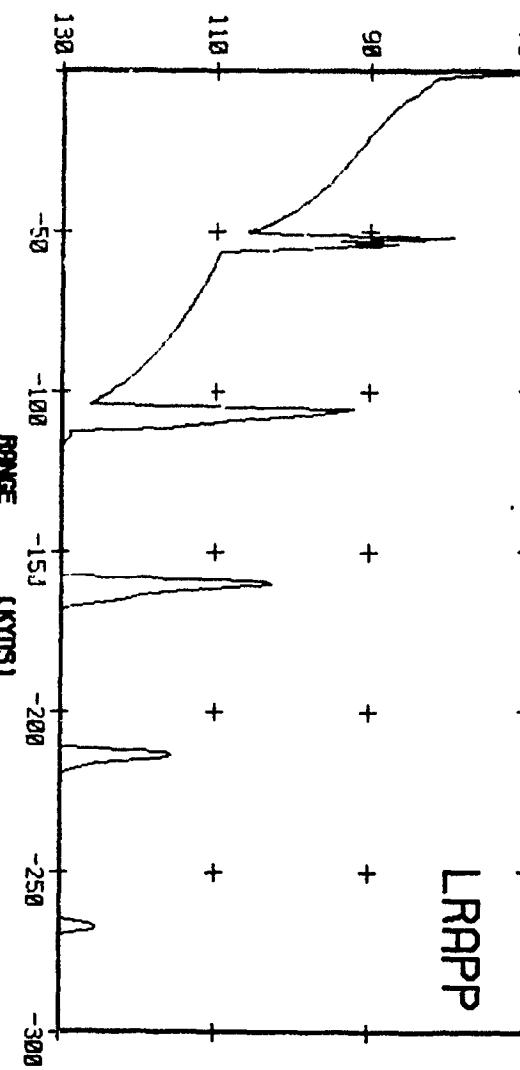
70

ARR 4R SUMMER

S 50 R 133 F 2500

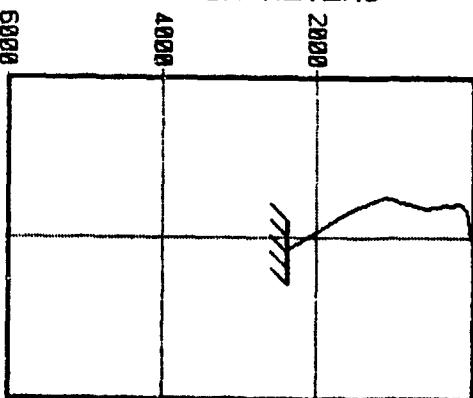
1450 M/S 1500 1550

DB LOSS

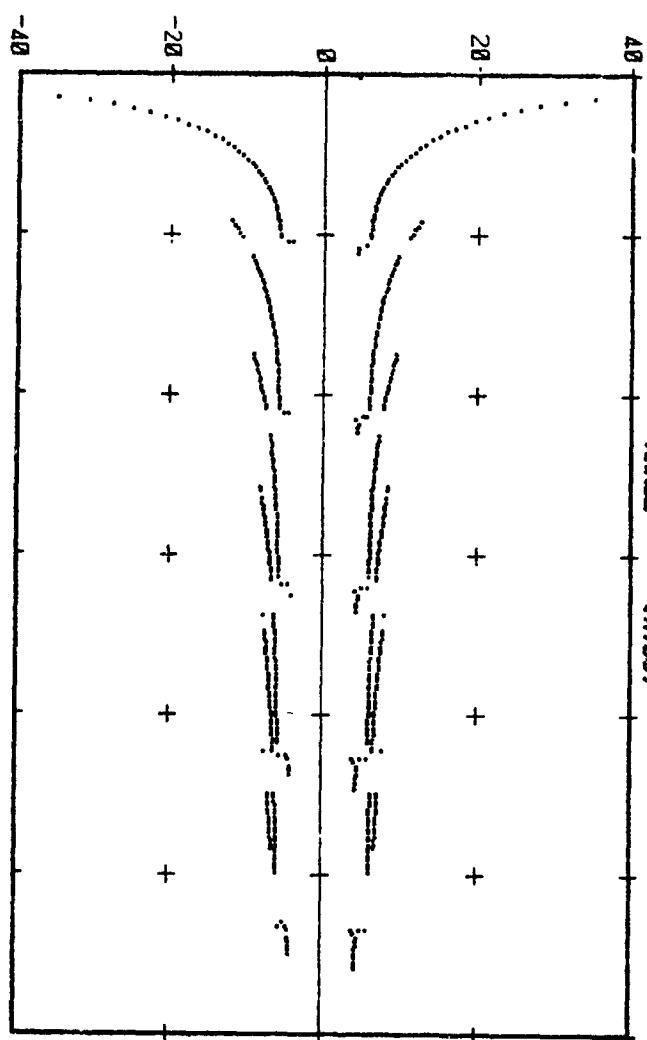


LRAPP

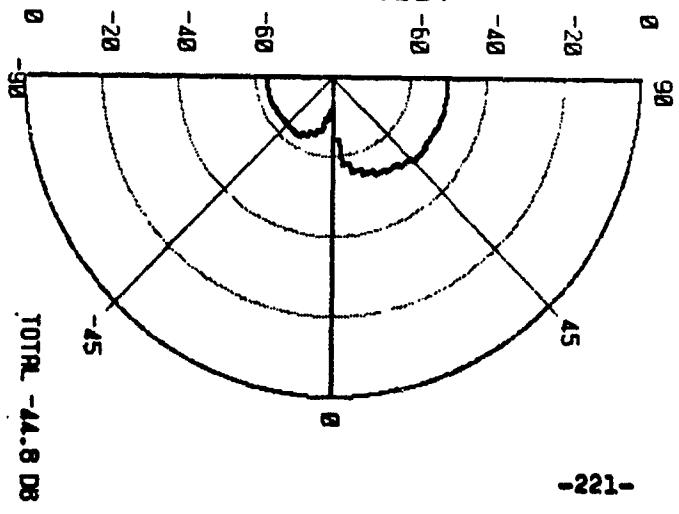
DEPTH IN METERS

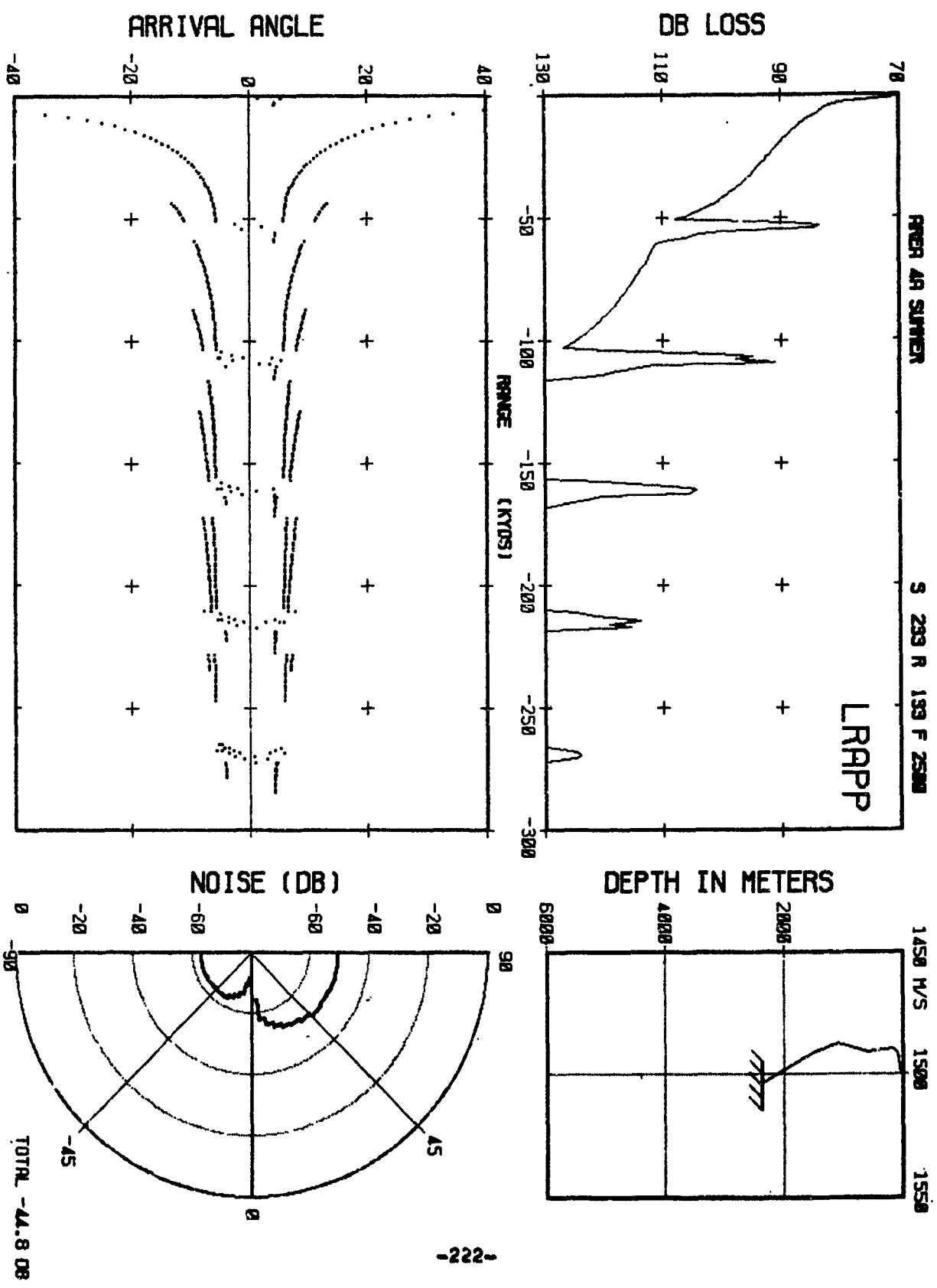


ARRIVAL ANGLE



NOISE (DB)





70

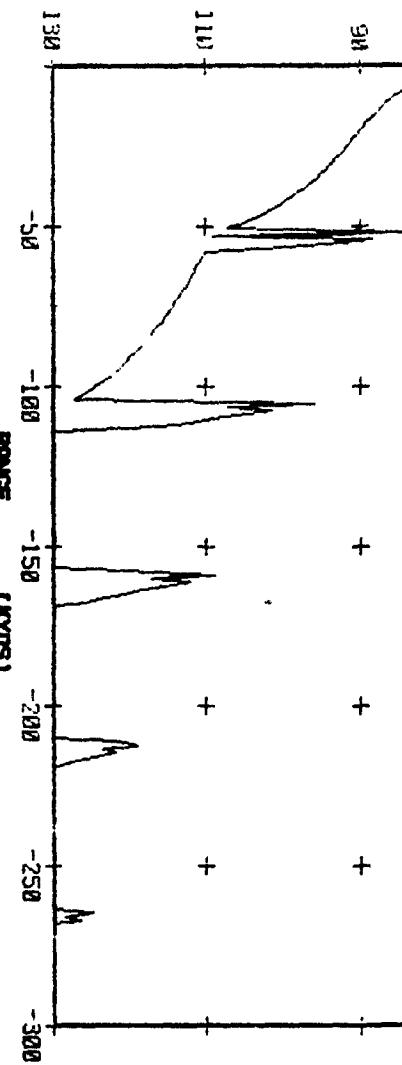
ARR AR SINTER

S 20 R 300 F 2500

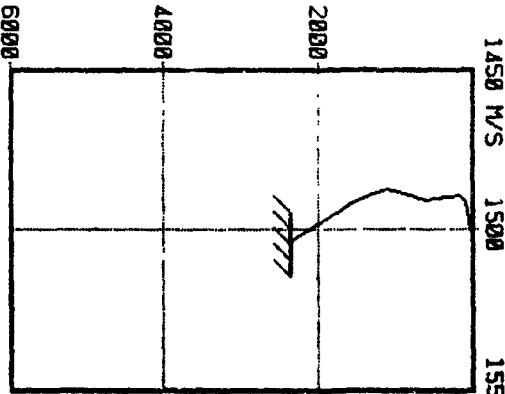
LRAPP

1450 M/S 1520 1550

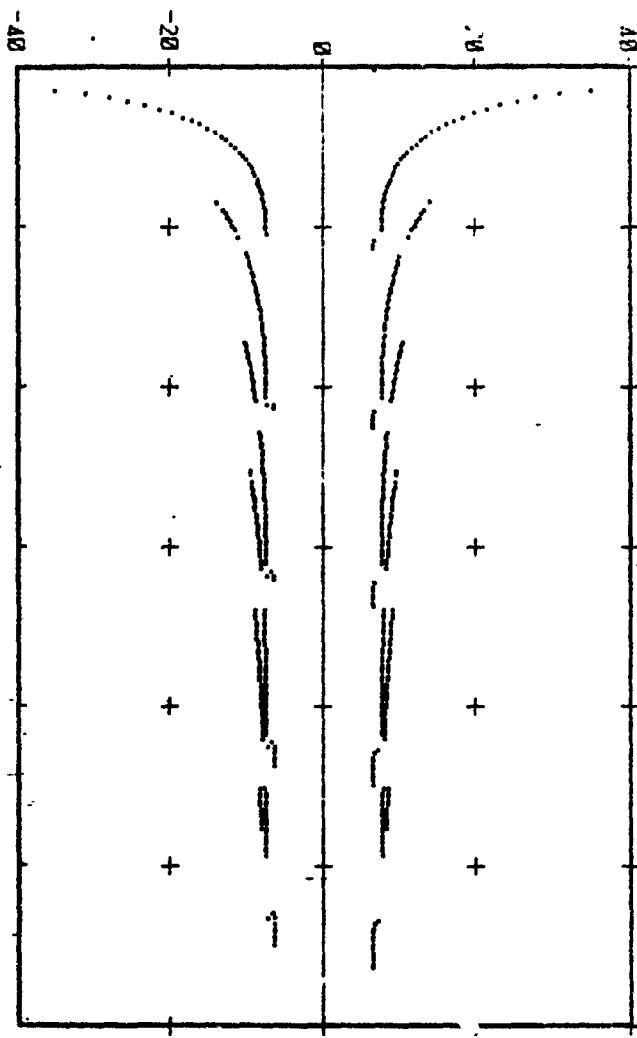
DB LOSS



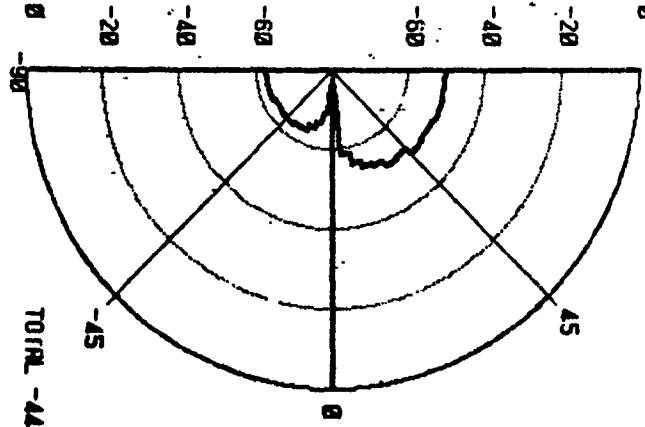
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)



78

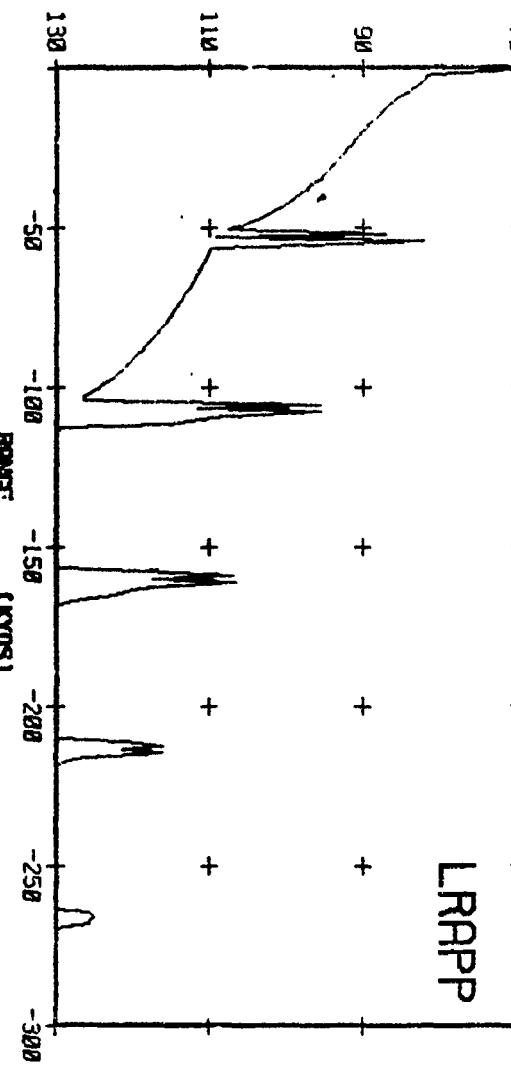
ARR 4R SUMMER

S 59 R 300 F 2500

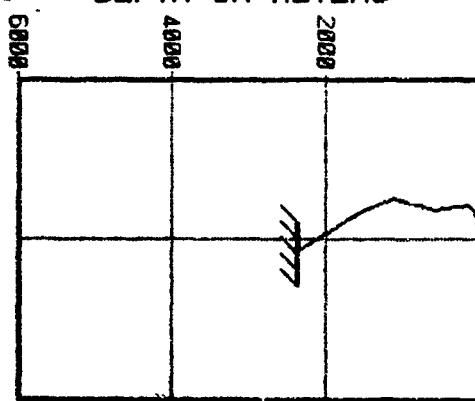
1450 M/S 1500 1550

LRRAPP

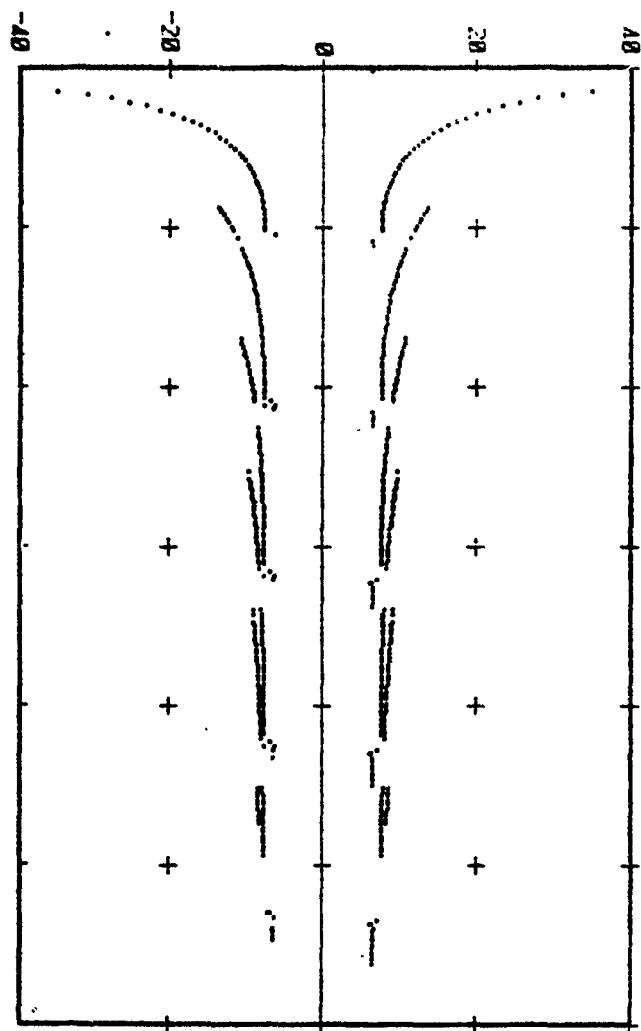
DB LOSS



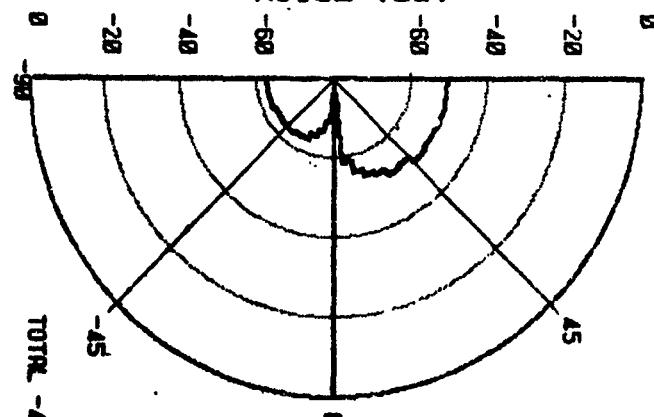
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)



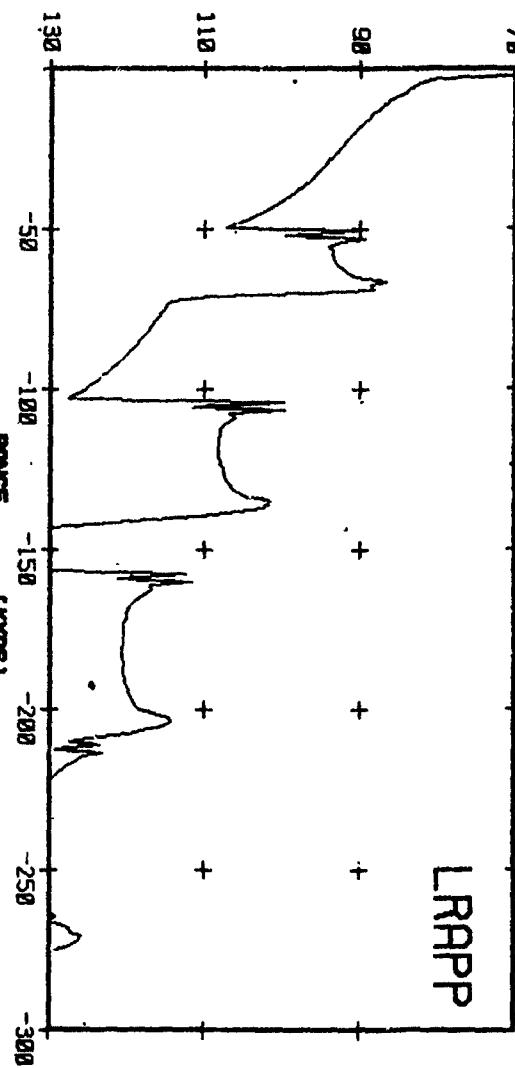
TOTAL -44.8 DB

AFTER AIR SUMMER

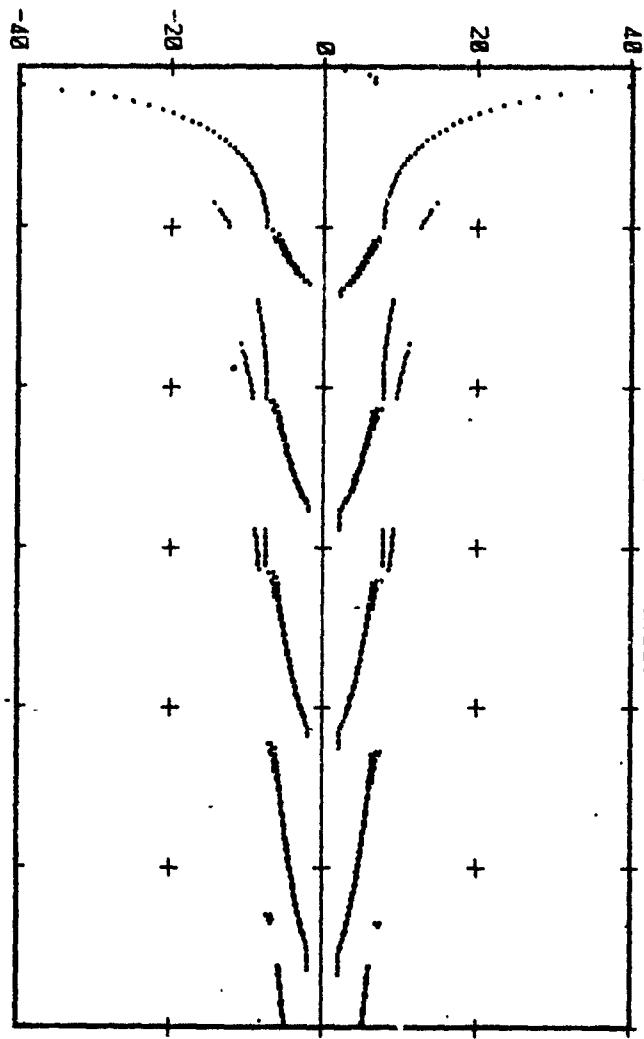
S 239 R 369 F 2500

1450 m/s 1500 1550

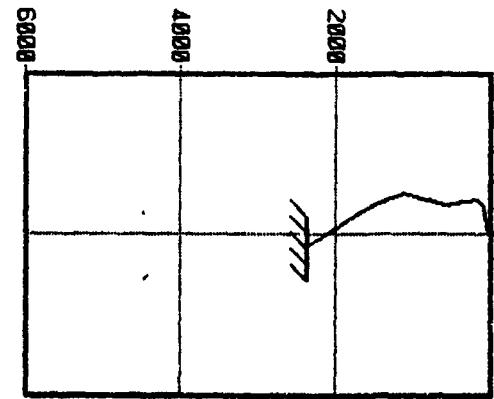
DB LOSS



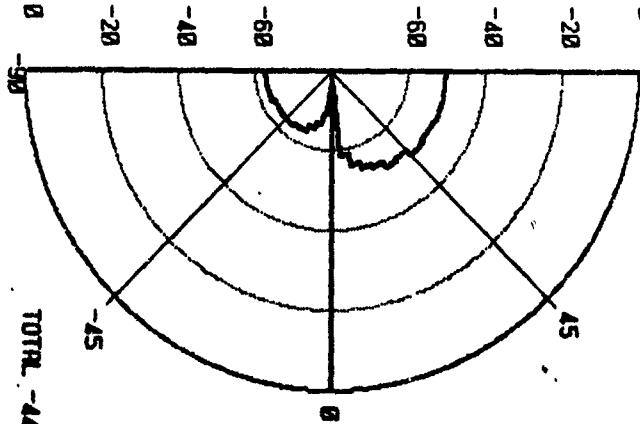
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



78

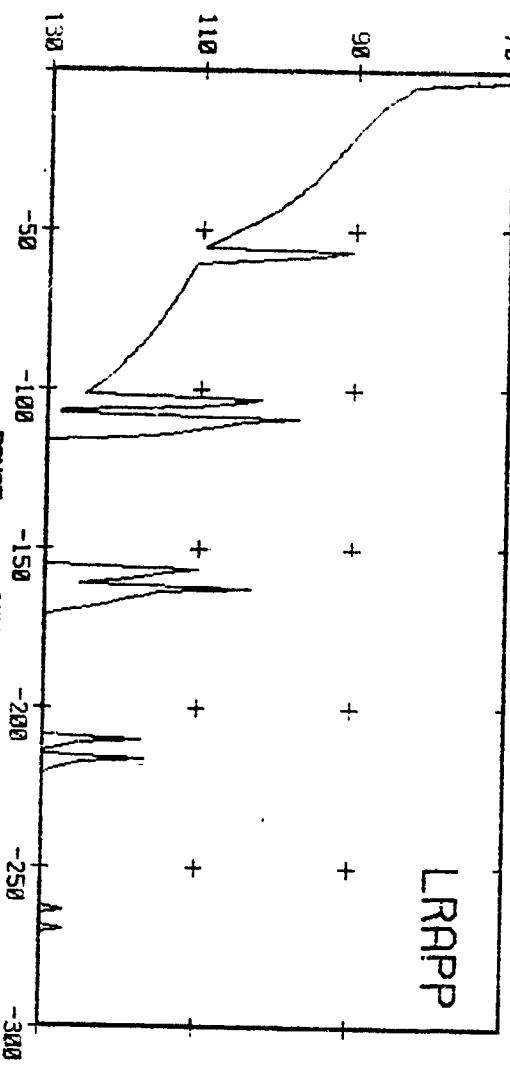
AFTER 4R SUMMER

S 28 R 1000 F 2500

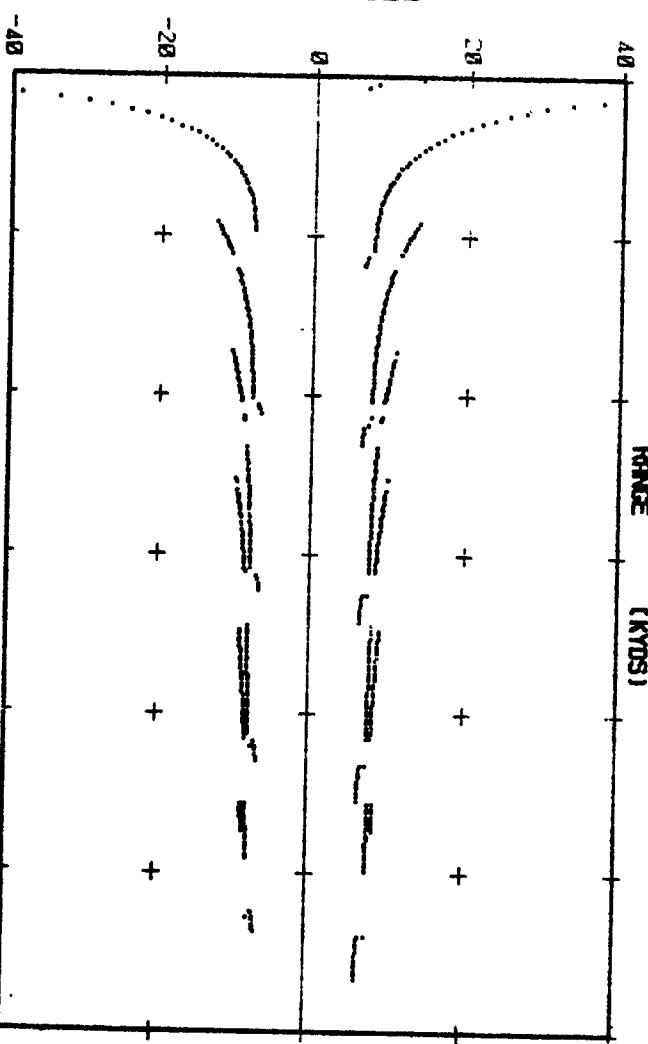
1450 M/S 1500 1550

LRAPP

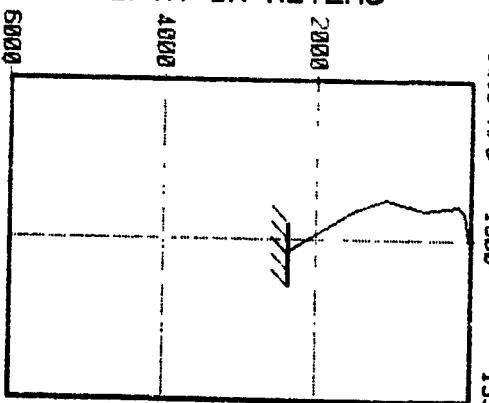
DB LOSS



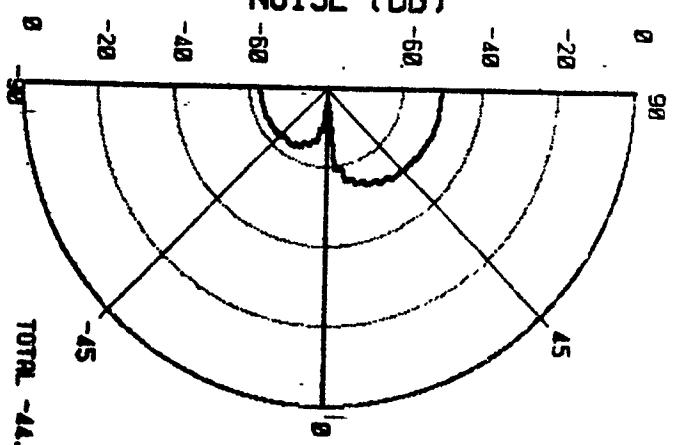
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



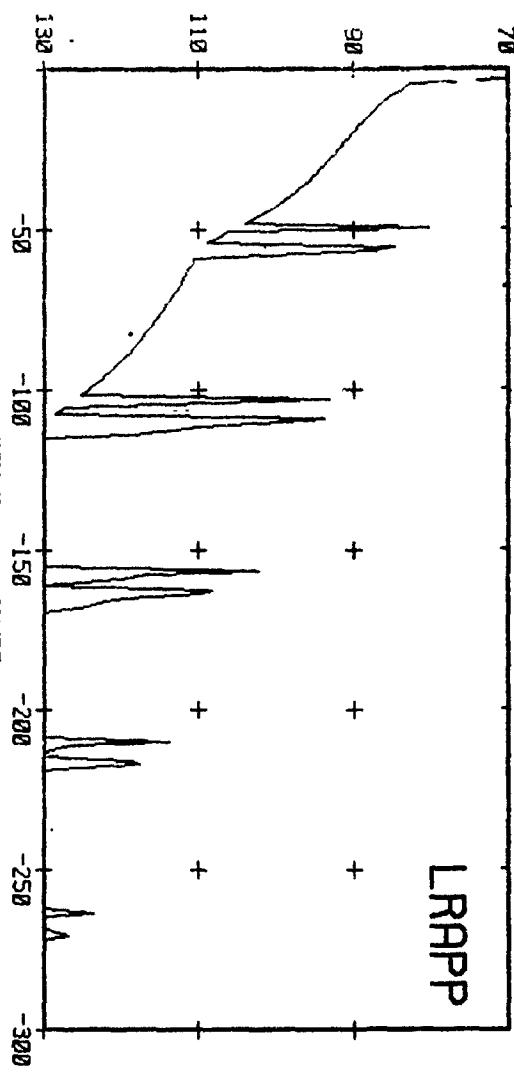
TOTAL -44.9 DB

AREA 4A SUMMER

S 50 R 1000 F 2500

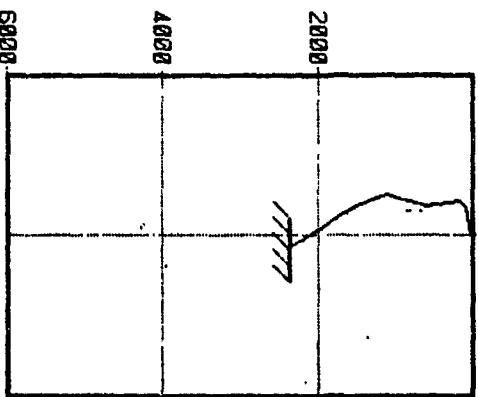
1450 M/S 1500 1550

DB LOSS

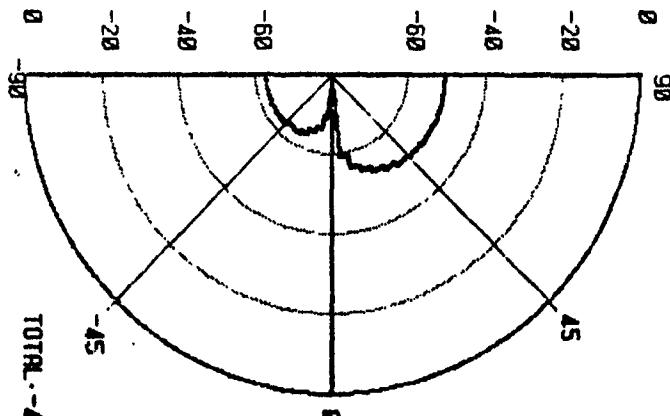


LRAAPP

DEPTH IN METERS



NOISE (DB)



TOTAL -44.9 DB

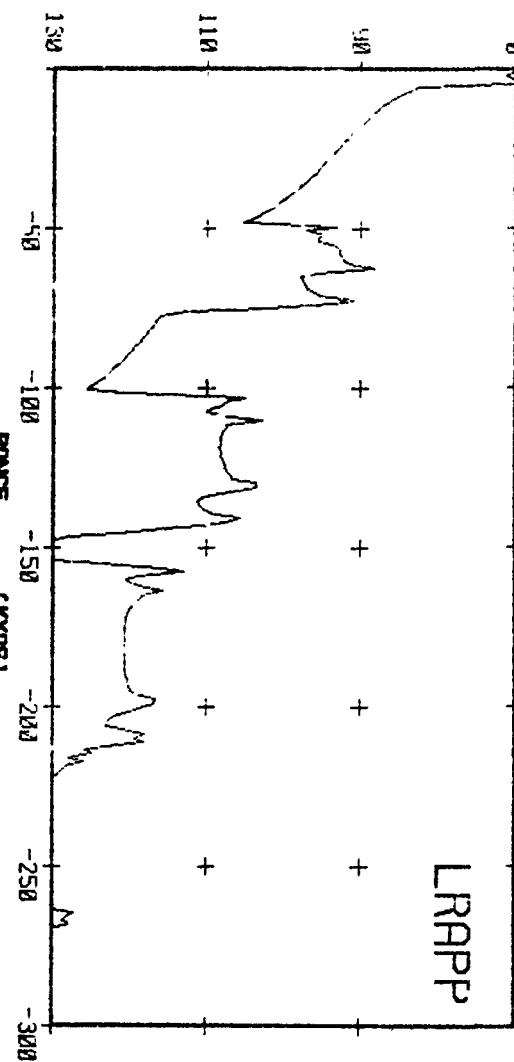
ARER 4R SUMMER

S 233 R 1035 F 2500

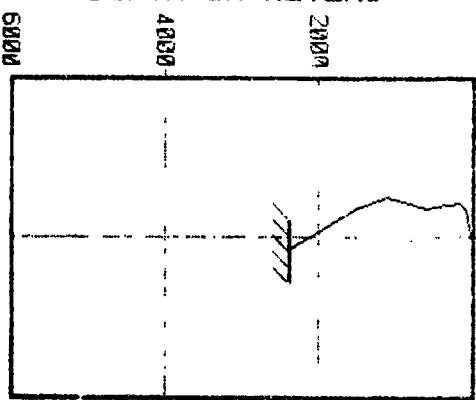
1450 M/S 1500 1550

LRAFP

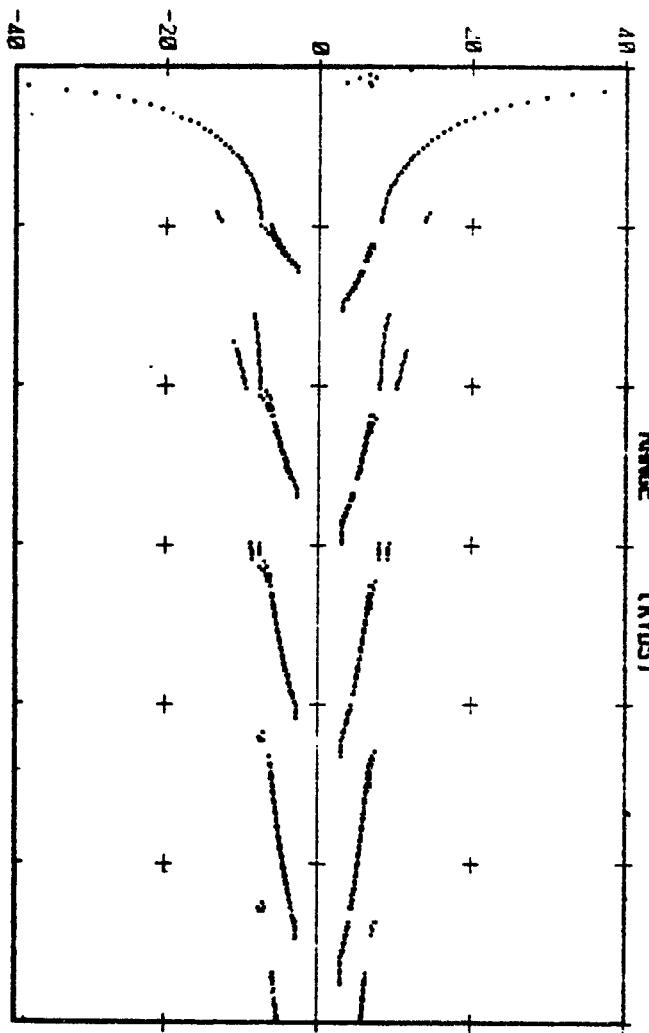
DB LOSS



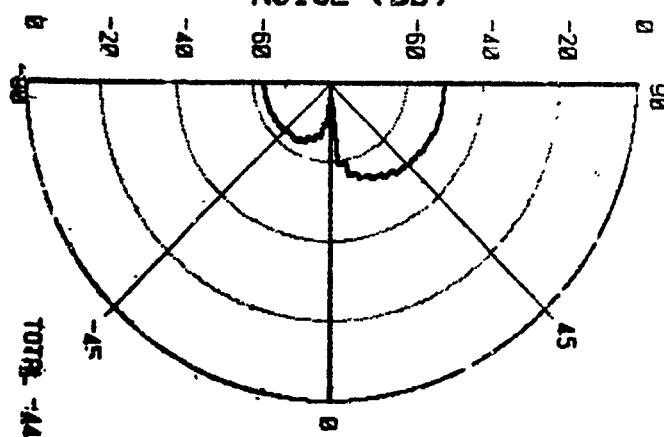
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)



TOTAL -44.9 dB

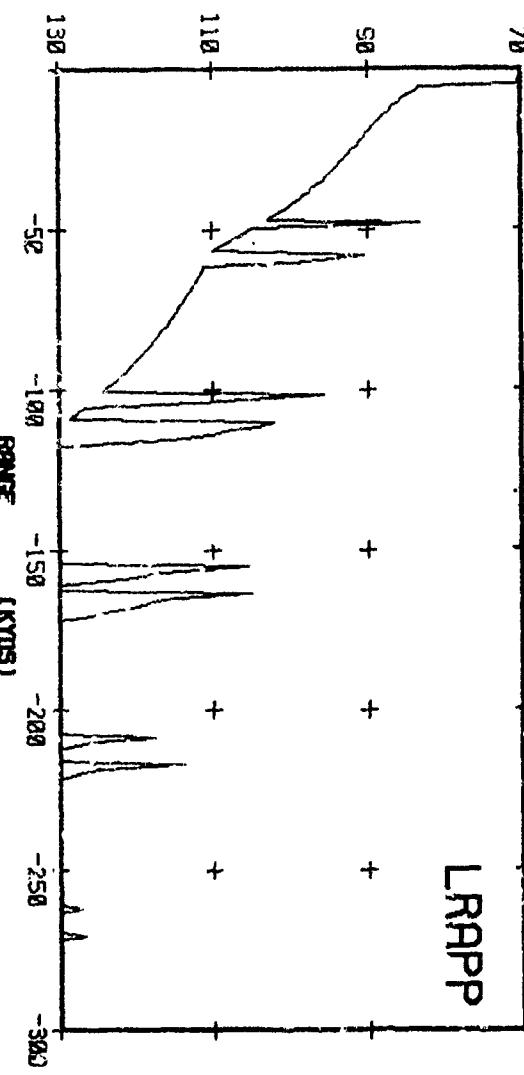
FREQUENCIES

2 25 R 1500 F 2500

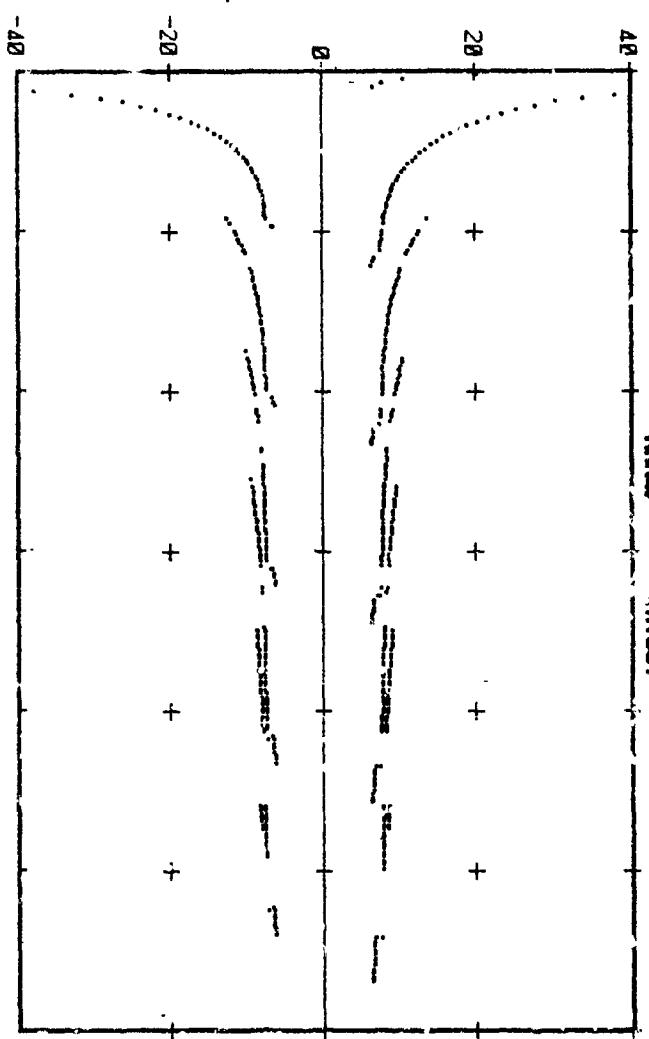
1450 M/S 1500 1550

LRAFP

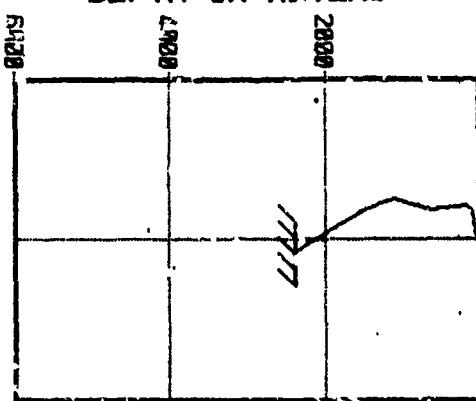
DB LOSS



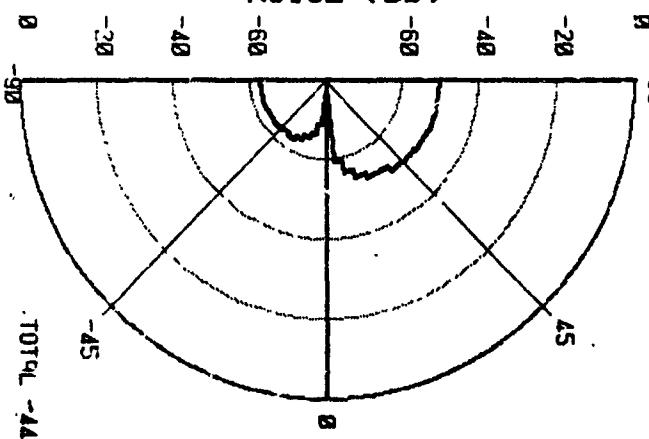
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



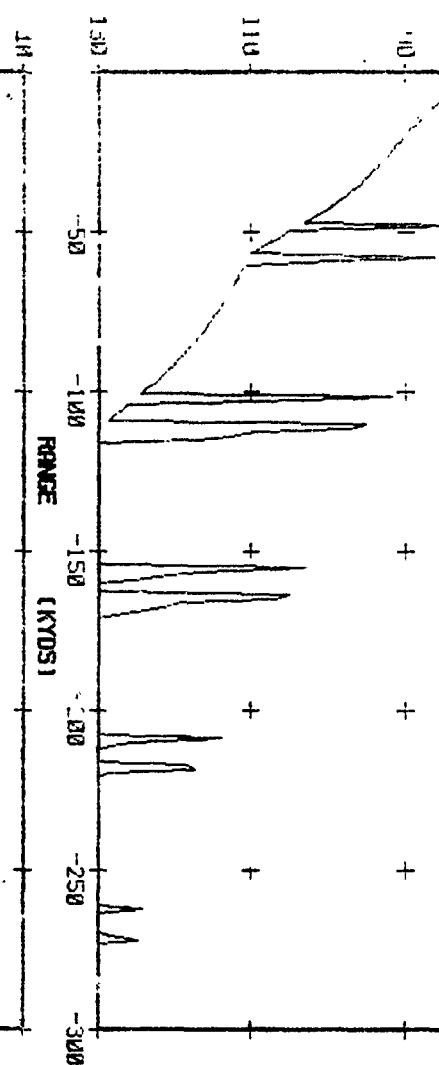
TOTAL -44.9 DB

PATER 4R SUMMER S 50 R 1500 F 2513

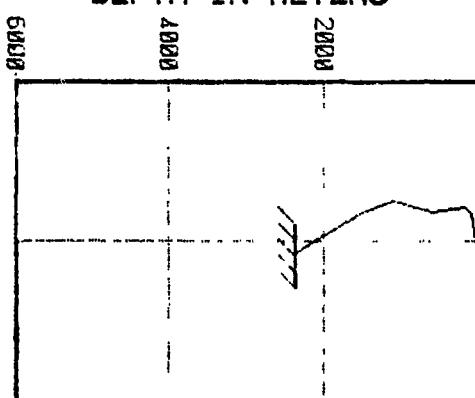
1450 M/S 1500 1550

LRAPP

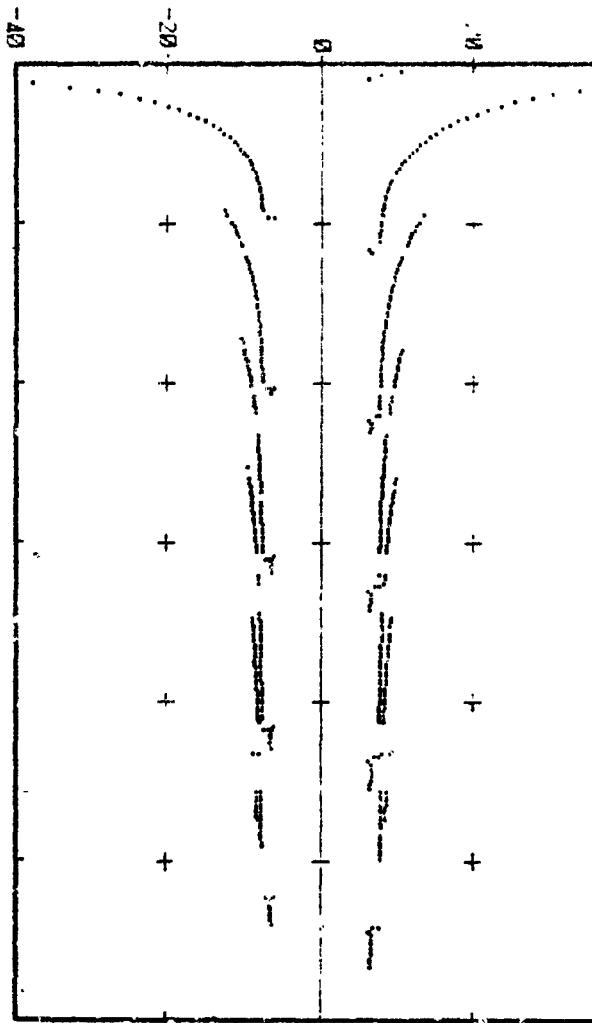
DB LOSS



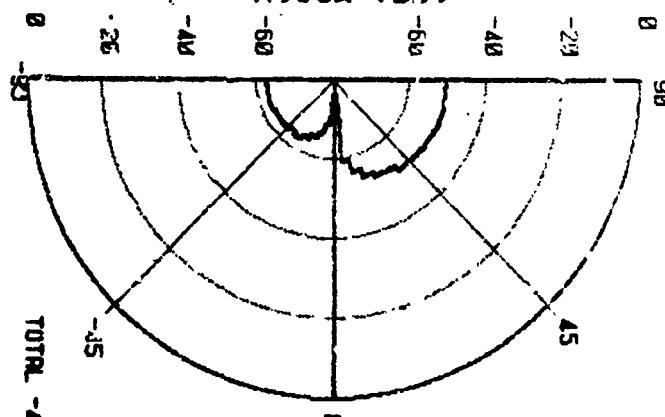
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)



-230-

TOTAL - u.s. 9 DB

-40

70

AKER 4R S/WER

S 233 R 1500 F 2500

1458 M/S 1500 1550

LRAPP

DB LOSS

110

100

90

80

70

60

50

40

30

20

10

0

130

110

90

70

50

30

10

0

RANGE (KTS)

0

2000

4000

6000

8000

0

DEPTH IN METERS

ARRIVAL ANGLE

20

0

-20

-40

-60

-80

-100

-120

-140

-160

-180

-200

-220

-240

-260

-280

-300

-320

-340

-360

-380

-400

-420

-440

-460

-480

-500

-520

-540

-560

-580

-600

-620

-640

-660

-680

-700

-720

-740

-760

-780

-800

-820

-840

-860

-880

-900

-920

-940

-960

-980

-1000

-1020

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-1060

-1080

-1100

-1120

-1140

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-3960

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-4000

-4020

-4040

-4060

-4080

-4100

-4120

-4140

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-4180

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-5700

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-5760

-5780

-580

70

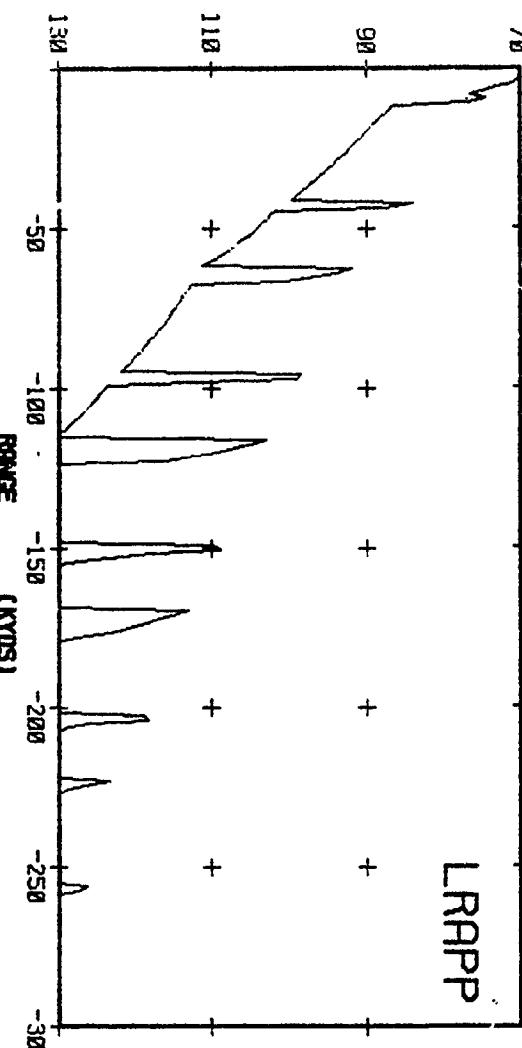
ATER 4A SUMMER

S 28 R 3767 F 2500

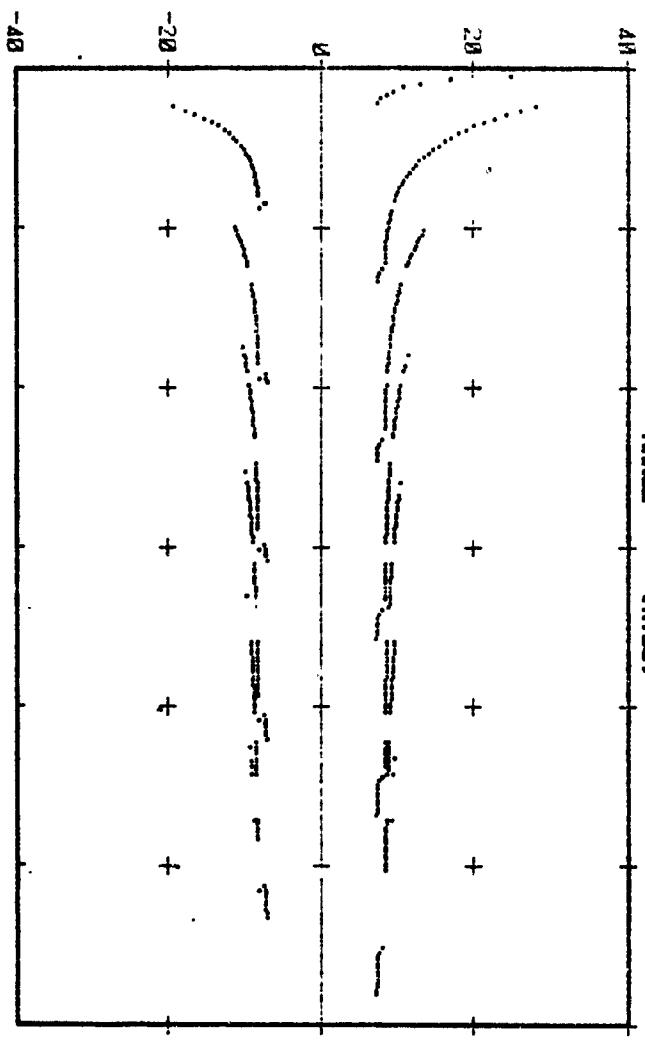
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LRAPP

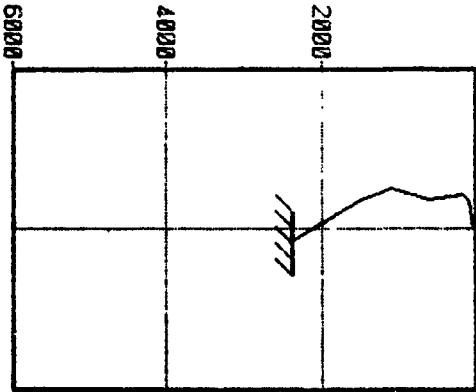
DB LOSS



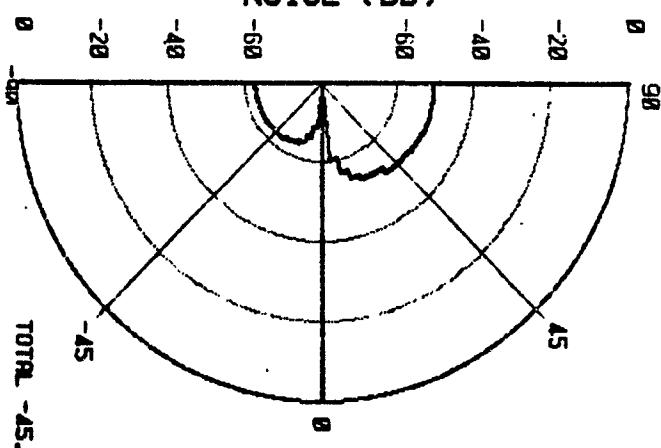
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



TOTAL -45.1 DB

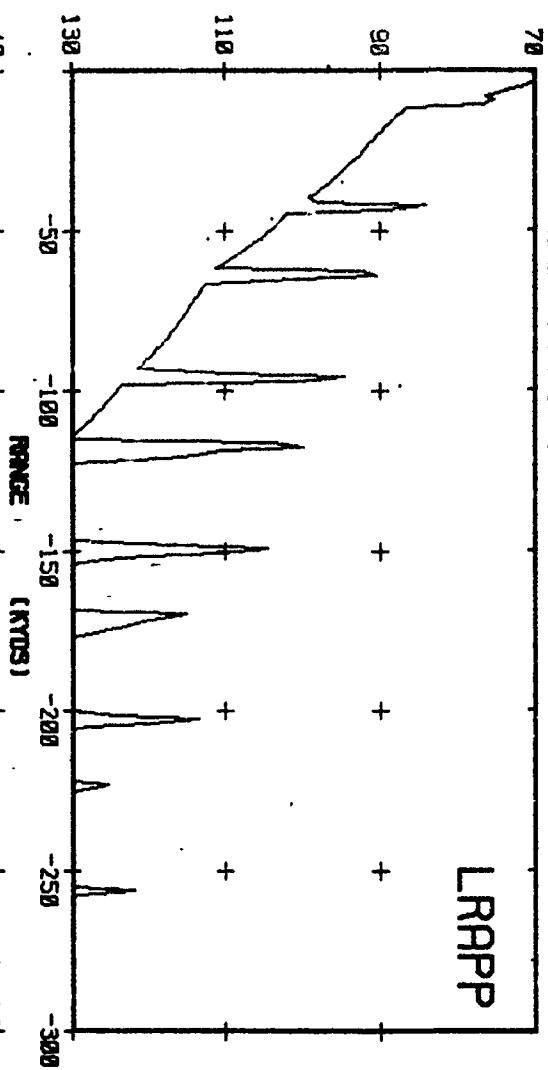
AER 4R SUMMER

S 58 R 3777 F 2500

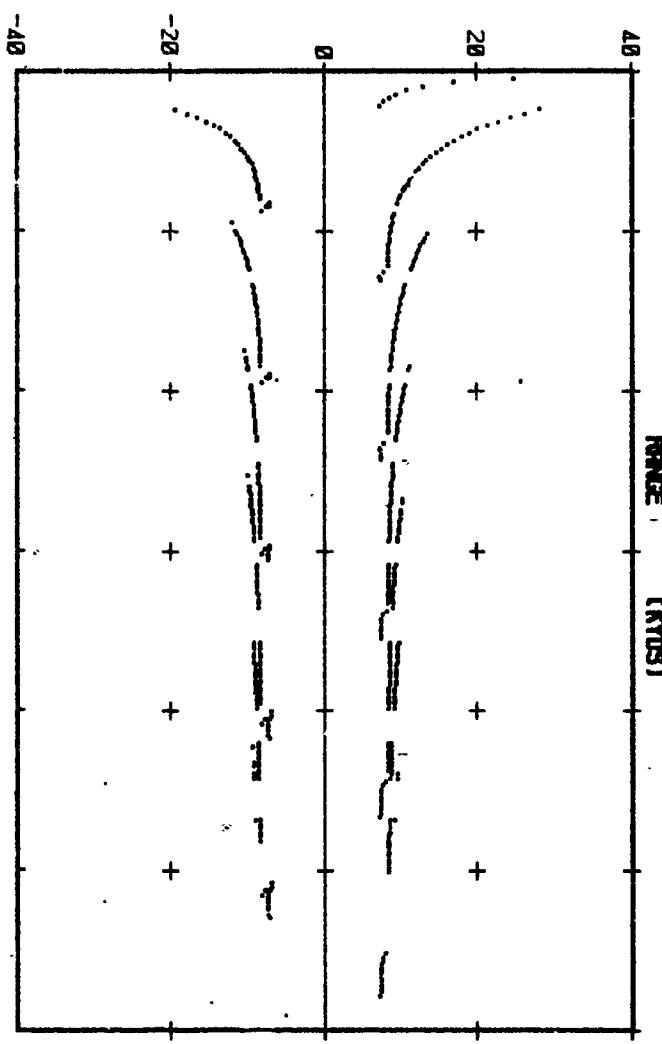
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LRAAPP

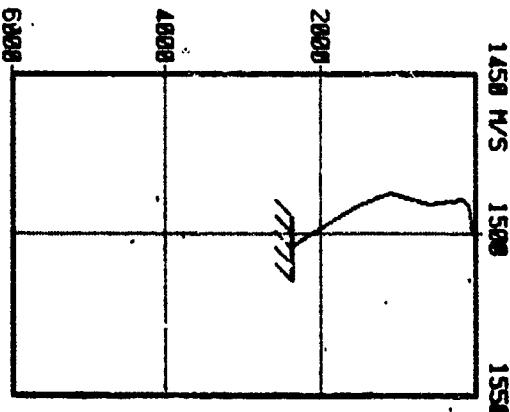
DB LOSS



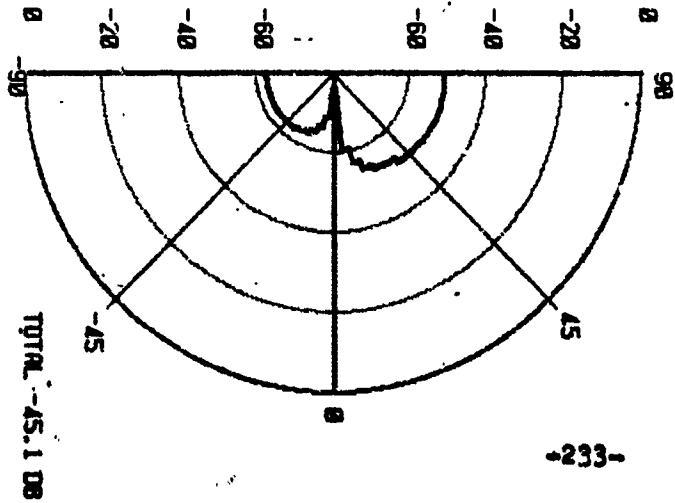
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



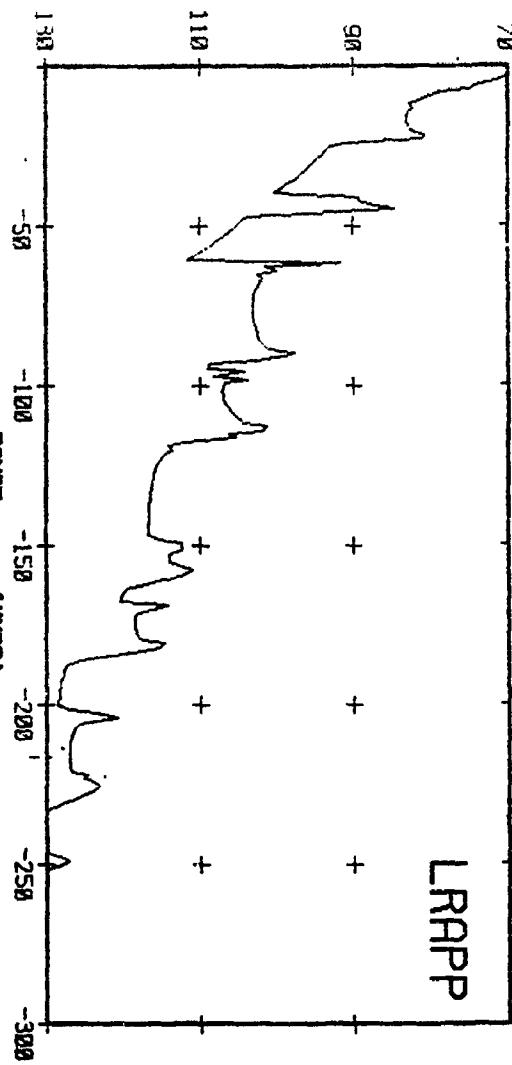
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S 233 R 3767 F 2500

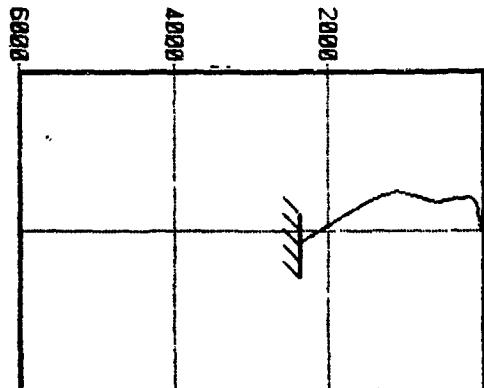
1450 M/S 1500 1550

L.RAPP

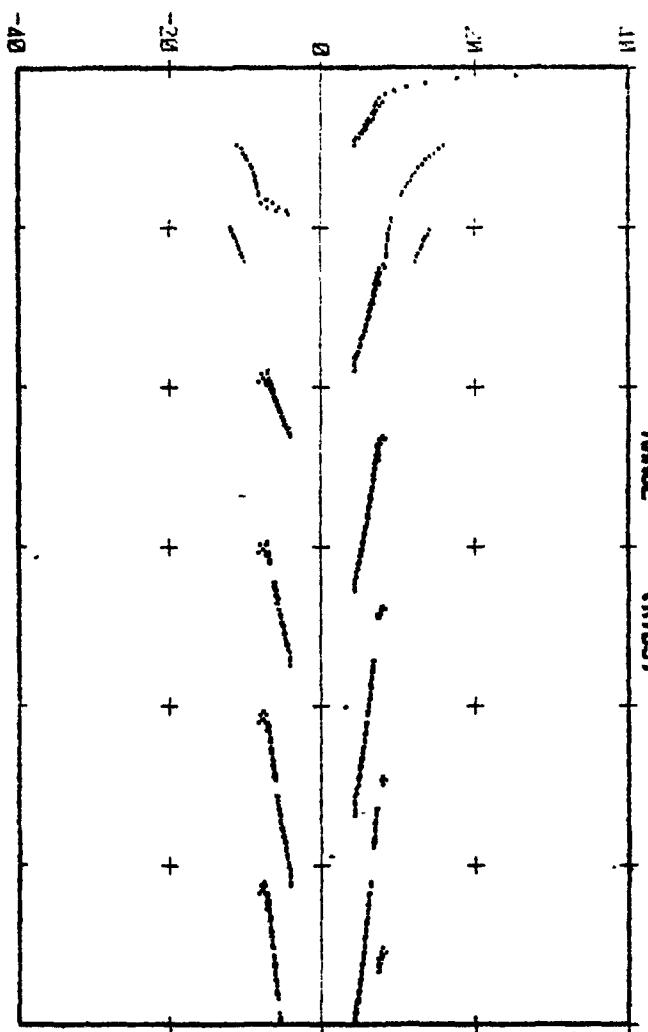
DB LOSS



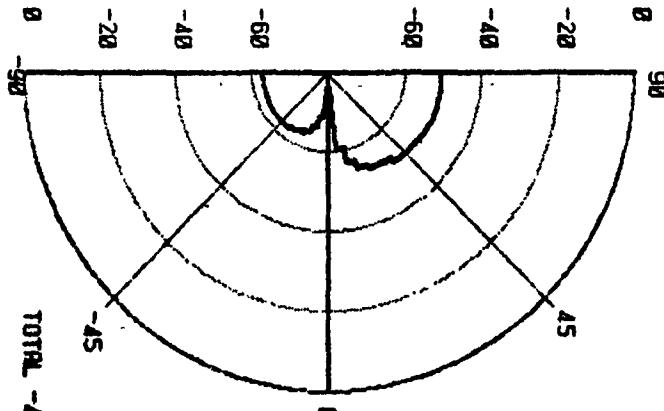
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)



70

AREA 4A SUMMER

5

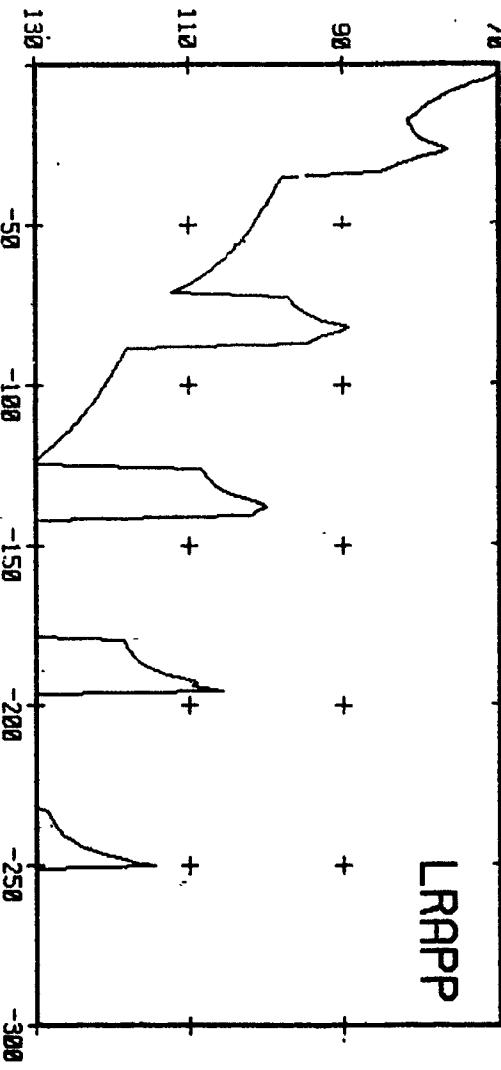
28 R 6858 F 2500

1450 M/S

1500

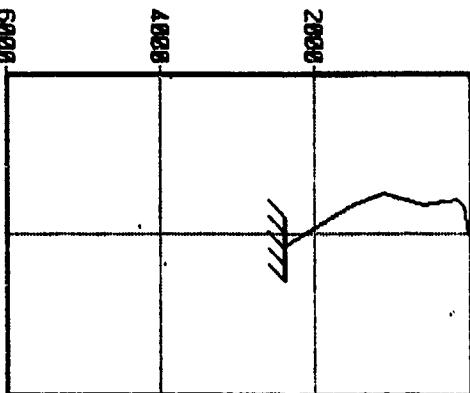
1550

DB LOSS

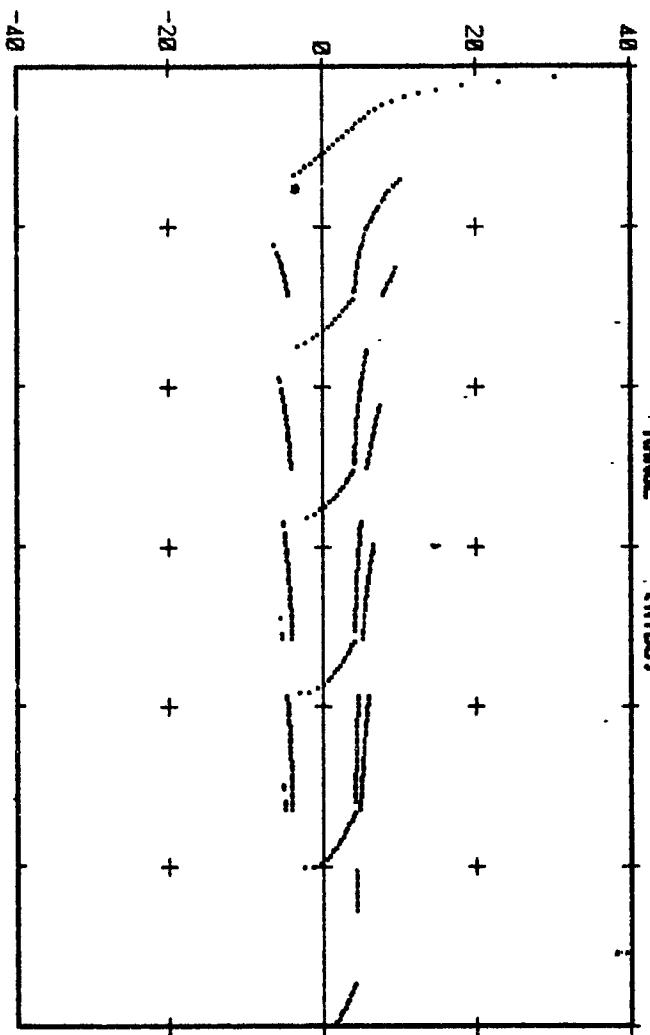


LRAAPP

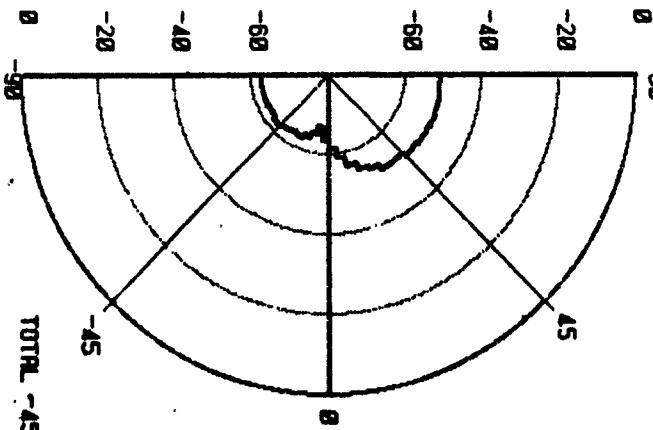
DEPTH IN METERS



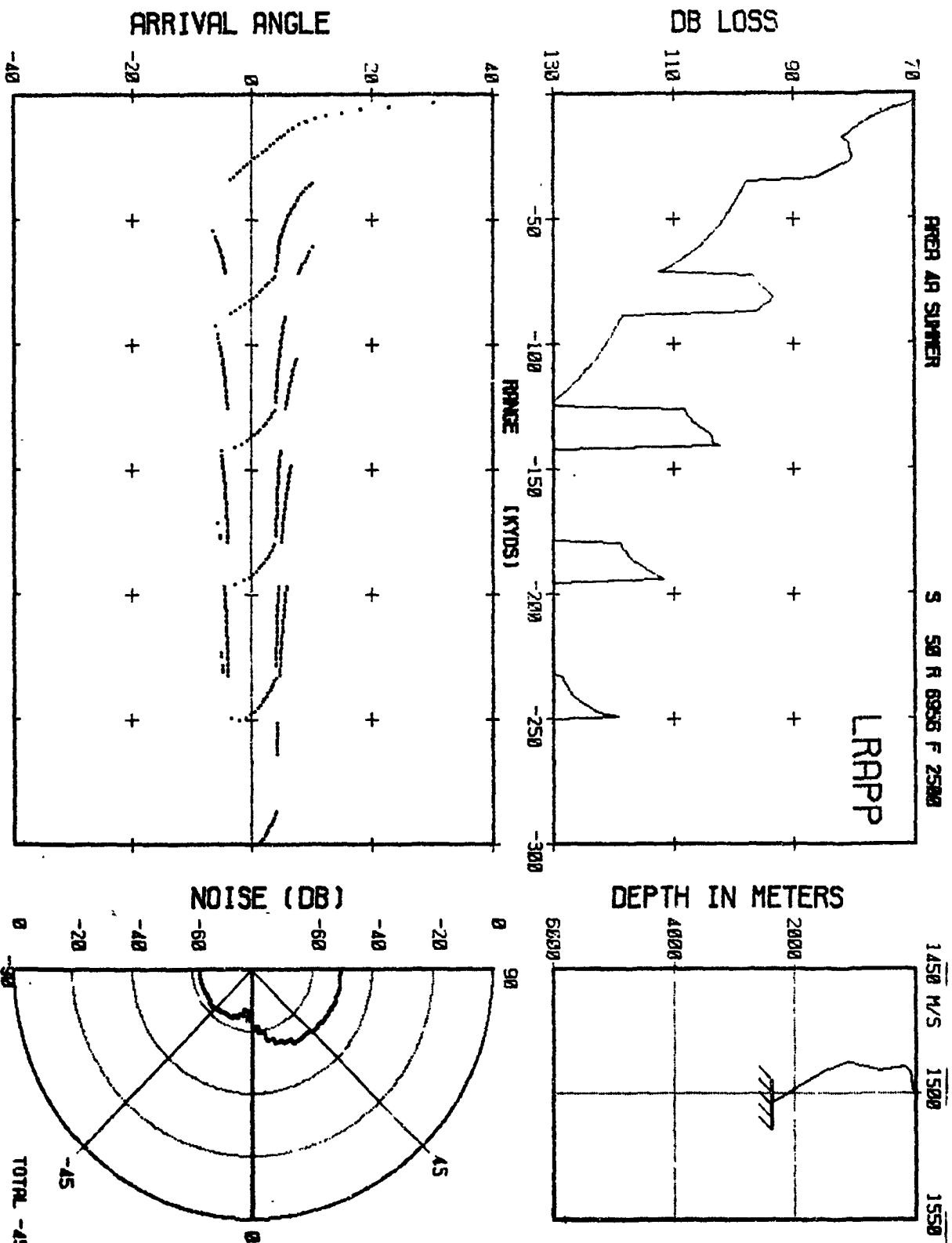
ARRIVAL ANGLE



NOISE (DB)



TOTAL -45.1 DB



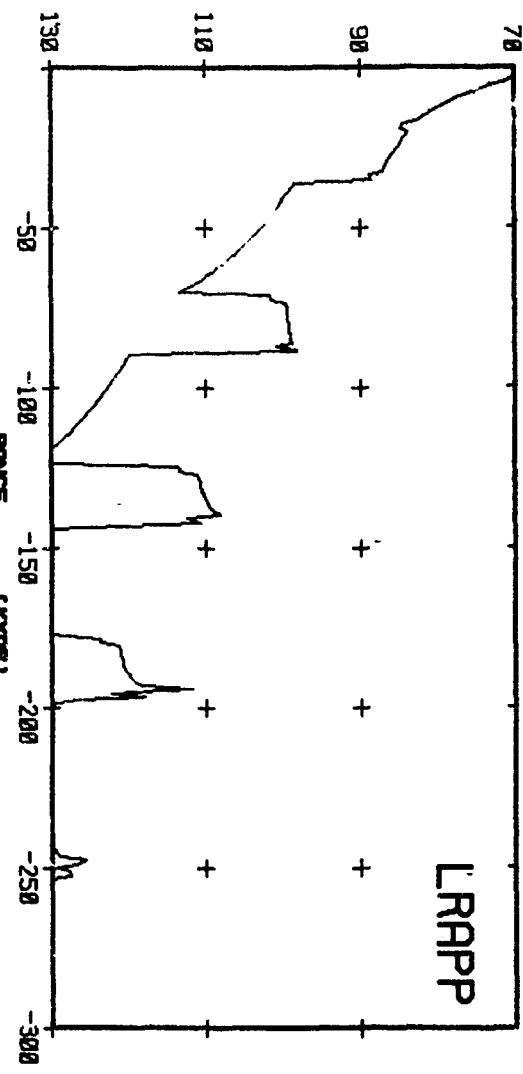
PIER 49 SUMMER

S 23° N 66° E F 2500

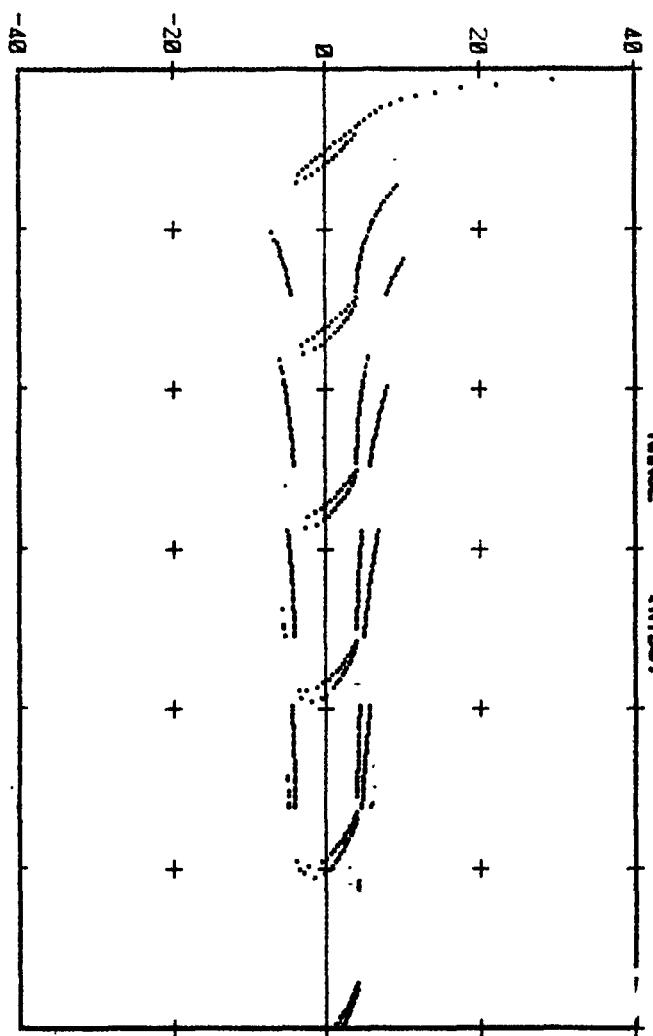
1459 M/S 1508 1554

L RAPP

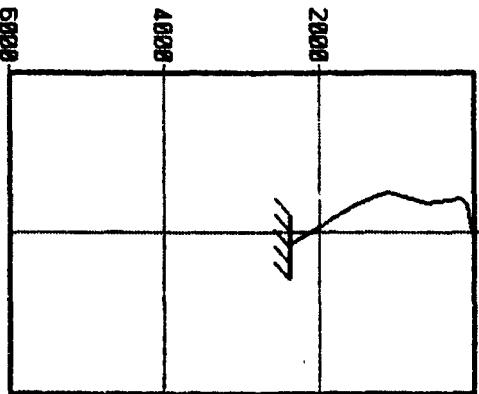
DB LOSS



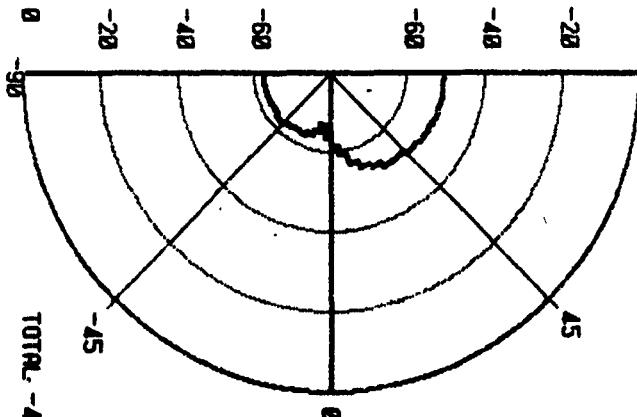
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



TOTAL -45.1 dB

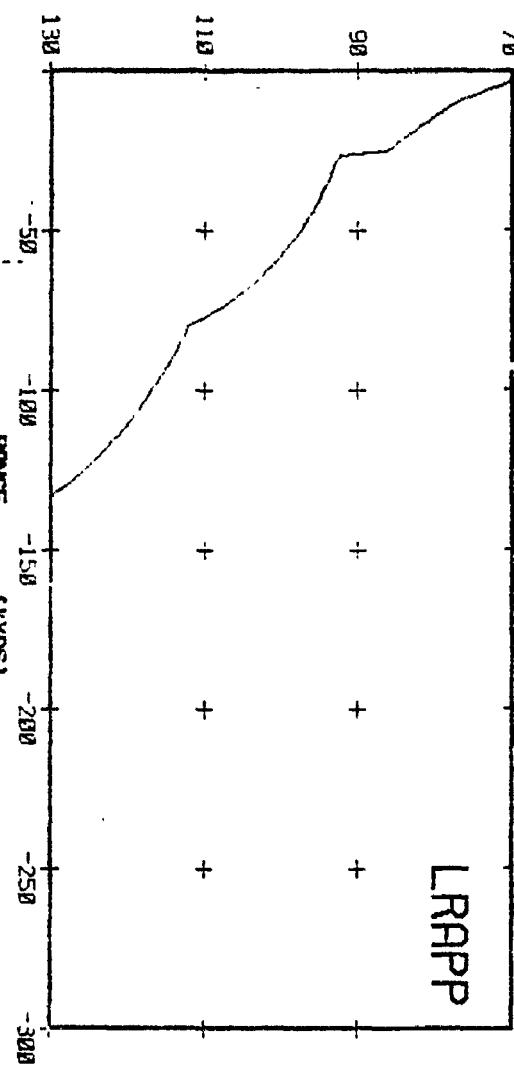
RIVER 4A SUMMER

S 28 R 7788 F 2580

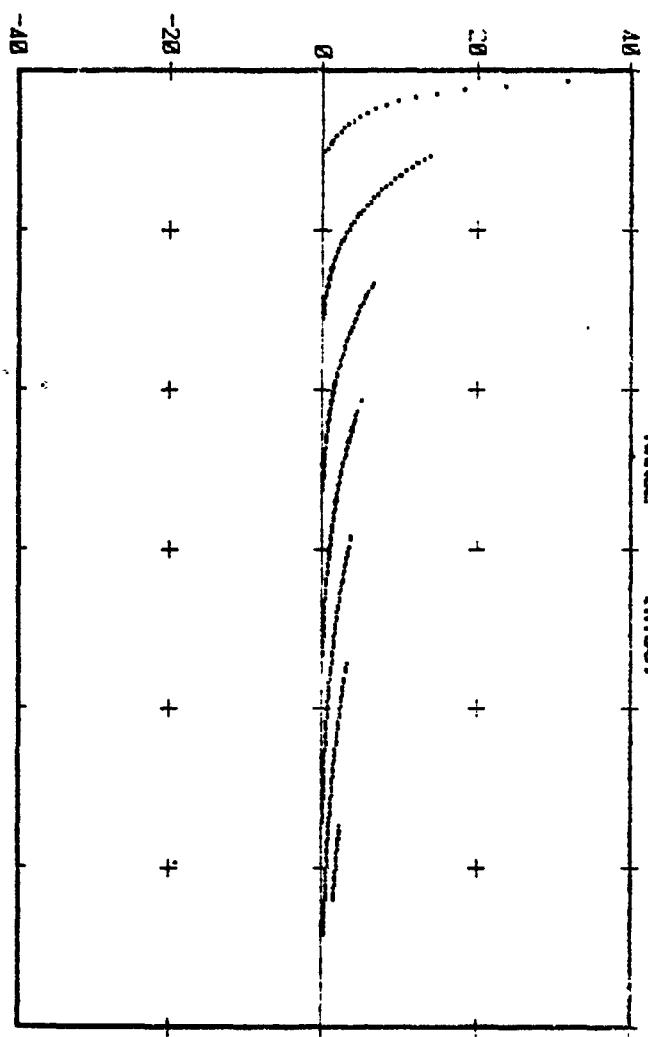
1450 M/S 1500 1550

LRAPP

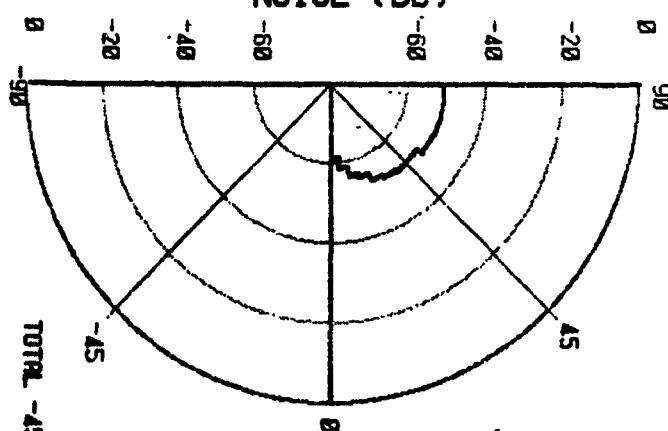
DB LOSS



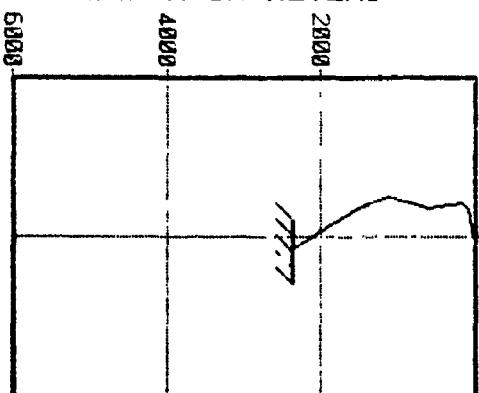
ARRIVAL ANGLE

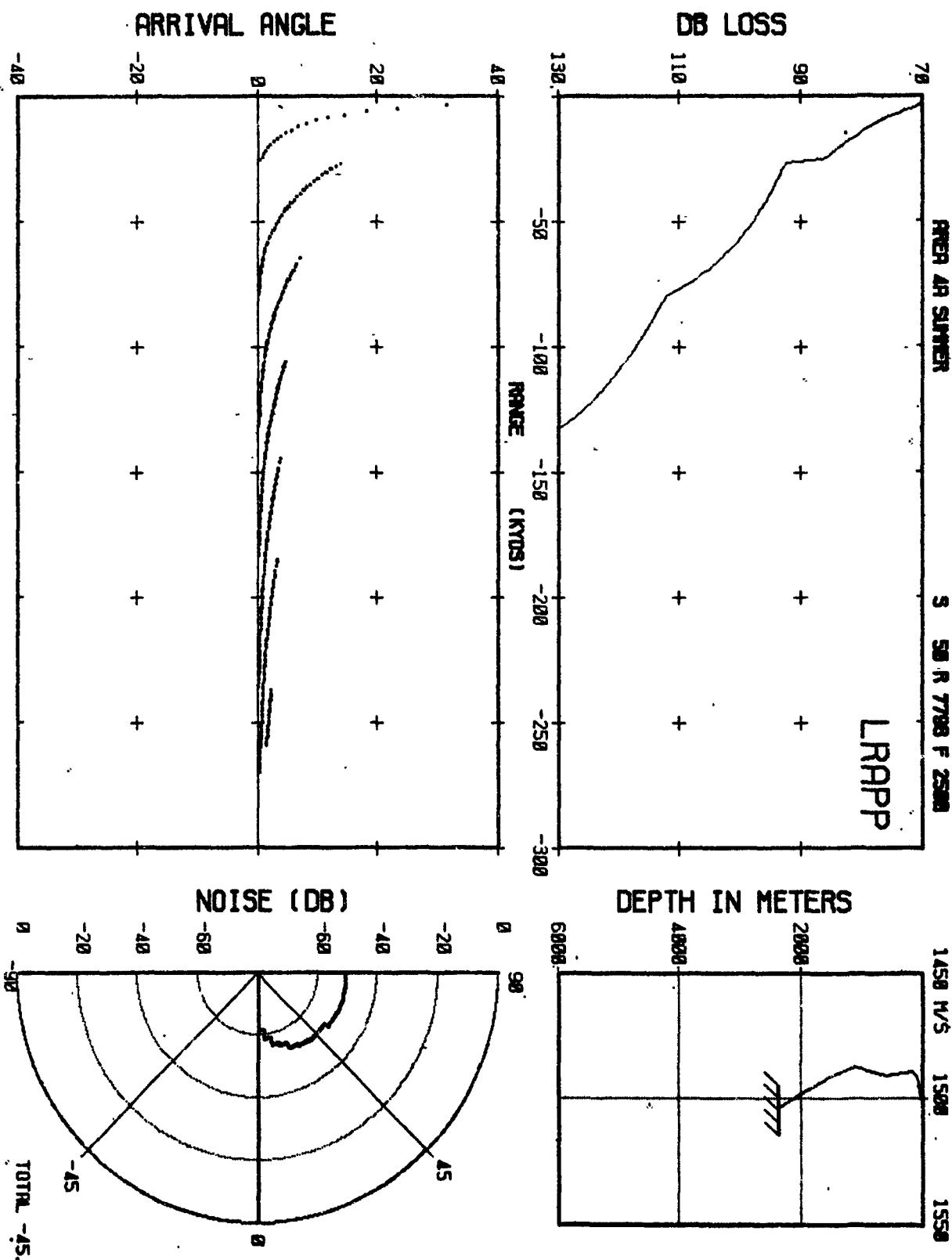


NOISE (DB)



DEPTH IN METERS





78

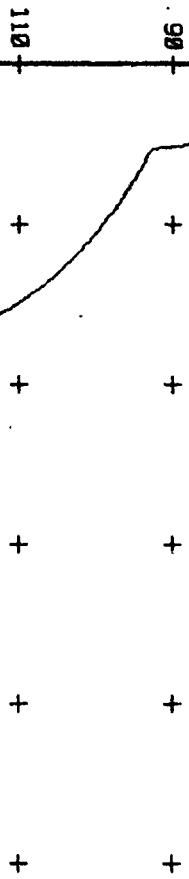
AREA 4A SUMMER

S 233 R 7768 F 2500

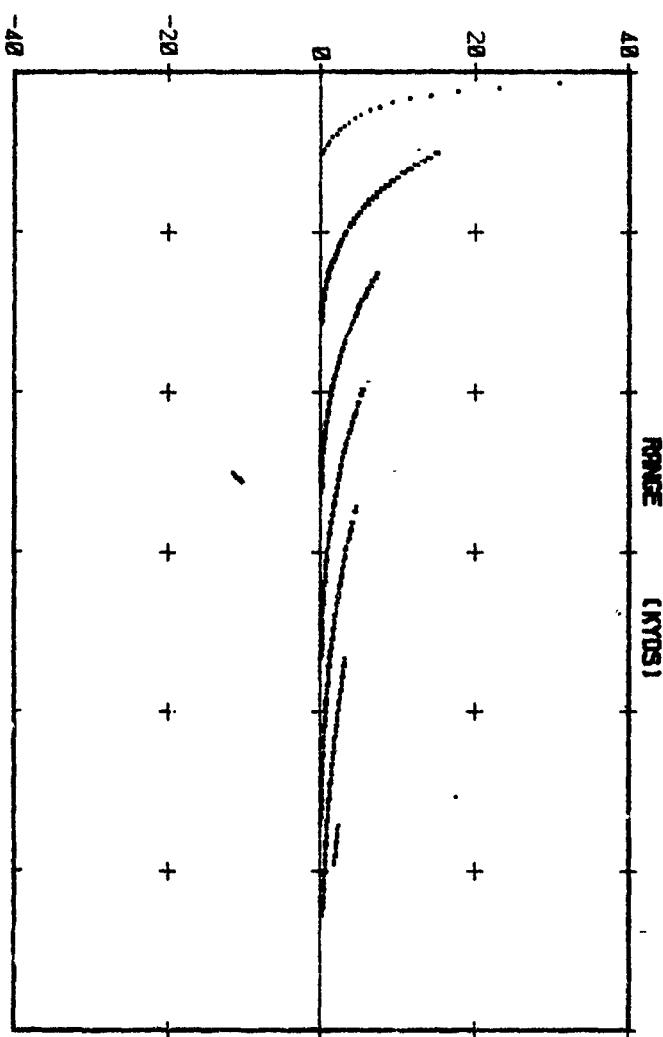
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LRAPP

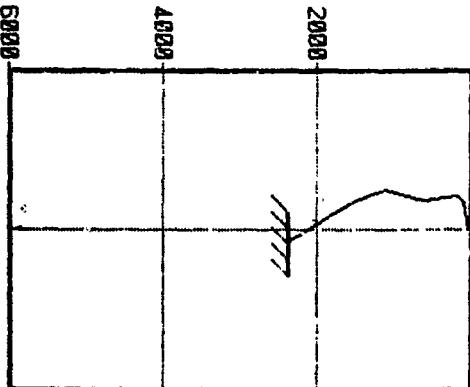
DB LOSS



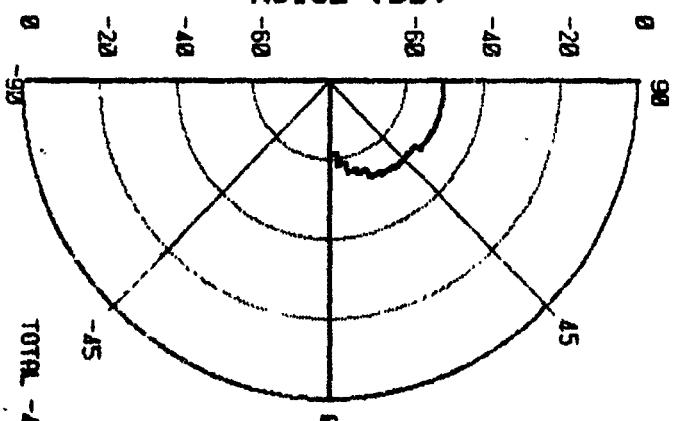
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)





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SUITE 1425
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IN REPLY REFER TO:

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Subj: DECLASSIFICATION OF LONG RANGE ACOUSTIC PROPAGATION PROJECT (LRAPP) DOCUMENTS

Ref: (a) SECNAVINST 5510.36

Encl: (1) List of DECLASSIFIED LRAPP Documents

1. In accordance with reference (a), a declassification review has been conducted on a number of classified LRAPP documents.
2. The LRAPP documents listed in enclosure (1) have been downgraded to UNCLASSIFIED and have been approved for public release. These documents should be remarked as follows:

Classification changed to UNCLASSIFIED by authority of the Chief of Naval Operations (N772) letter N772A/6U875630, 20 January 2006.

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3. Questions may be directed to the undersigned on (703) 696-4619, DSN 426-4619.

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Subj: DECLASSIFICATION OF LONG RANGE ACOUSTIC PROPAGATION PROJECT
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Report Number	Personal Author	Title	Publication Source (Originator)	Pub. Date	Current Availability	Class.
Unavailable	Unavailable	ACOUSTIC ENVIRONMENTAL SCENARIOS AND PREDICTIONS FOR ASW. VOLUME VII. AREA 3A SUMMER PREDICTIONS FOR PASSIVE SONAR	Maury Center for Ocean Science	721001	AD0910342	U
Unavailable	Unavailable	ACOUSTIC ENVIRONMENTAL SCENARIOS AND PREDICTIONS FOR ASW. VOLUME VIII. AREA 3B WINTER PREDICTIONS FOR PASSIVE SONAR	Maury Center for Ocean Science	721001	AD0910343	U
Unavailable	Unavailable	ACOUSTIC ENVIRONMENTAL SCENARIOS AND PREDICTIONS FOR ASW. VOLUME IX. AREA 3B SUMMER PREDICTIONS FOR PASSIVE SONAR	Maury Center for Ocean Science	721001	AD0910344	U
Unavailable	Unavailable	ACOUSTIC ENVIRONMENTAL SCENARIOS AND PREDICTIONS FOR ASW. VOLUME V. AREA 2 SUMMER PREDICTIONS FOR PASSIVE SONAR	Maury Center for Ocean Science	721001	AD0911224	U
Unavailable	Unavailable	ACOUSTIC ENVIRONMENTAL SCENARIOS AND PREDICTIONS FOR ASW. VOLUME XI. AREA 4A SUMMER PREDICTIONS FOR PASSIVE SONAR	Maury Center for Ocean Science	721001	AD0912560	U
Unavailable	Unavailable	ACOUSTIC ENVIRONMENTAL SCENARIOS AND PREDICTIONS FOR ASW. VOLUME X. AREA 4A WINTER PREDICTIONS FOR PASSIVE SONAR	Maury Center for Ocean Science	721001	AD0916556	U
MC-011 VOL. 14	Unavailable	ACOUSTIC ENVIRONMENTAL SCENARIOS AND PREDICTIONS FOR ASW. VOLUME XIV. AREA 5 WINTER PREDICTIONS FOR PASSIVE SONAR	Maury Center for Ocean Science	721001	AD0916557; ND	U
MC-011 VOL. 13	Unavailable	ACOUSTIC ENVIRONMENTAL SCENARIOS AND PREDICTIONS FOR ASW. VOLUME XIII. AREA 4B SUMMER PREDICTIONS FOR PASSIVE SONAR	Maury Center for Ocean Science	721001	AD0916610; ND	U
MCR008	Goodman, R. R., et al.	THE NEAT 1 EXPERIMENT (U)	Maury Center for Ocean Science	721001	NS; ND	U
Unavailable	Cherry, W. R.	LRAPP BEAMFORMER	Scripps Institution of Oceanography Marine Physical Laboratory	721015	ADA081876	U
ONR ACR-186	Gregory, J. B.	PROJECT LRAPP TEST BED- TECHNOLOGY USED IN THE DEVELOPMENT OF A DEEP-OCEAN STABLE PLATFORM (U)	Office of Naval Research	721024	AD09152370; ND	U
MC-010	Unavailable	CHURCH GABBRO EXERCISE PLAN- LRAPP (U)	Maury Center for Ocean Science	721026	ND	U
WHOI-72-87	Daubin, S. C., et al.	THE ACODAC SYSTEM	Woods Hole Oceanographic Institution	721101	AD0756628; ND	U
NRLR7516	Fleming, H. S., et al.	PROJECT NEAT 1 ENVIRONMENTAL DATA REPORT (U) (USNS J.W. GIBBS)	Naval Research Laboratory	721129	AD NS; ND 523746	U